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FLORISTIC AND GEOBOTANICAL STUDIES ON THE ISLAND OF YAKUSIMA, PROVINCE ŌSUMI

(With 13 Illustrations in the Text)

Genkei MASAMUNE

(Accepted for publication, November 10, 1933)

FOREWORD

In 1922, from the 13th to the 18th of July, I stayed in the island of Yakusima and made a study of the plants there. It was my first botanical excursion to that island, and the luxuriance of its forests and the richness of its plant vegetation attracted my interest to so high a degree that I gave myself to the study of this island from the phytogeographical and floristical point of view. Since then I visited it eight times, and was able to get a fairly good collection of the higher cryptogamic and flowering plants, on which in the meantime I published (1929) a note entitled "Preliminary Report on the Vegetation of Yakusima". The report was an abstract from my graduation thesis for the Tokyo Imperial University, carried out under the guidance of Dr. B. HAYATA, Professor of Systematic Botany in that university. The present paper is also a revised abstract of my graduation thesis.

The author wishes to take this opportunity to express his most cordial thanks to Dr. B. HAYATA for his guidance and encouragement, to Dr. T. NAKAI, Prof. of Systematic Botany at the Tokyo Imperial University, for his valuable advice in the work of compilation, to Dr. M. HONDA of the same university who kindly determined nearly all the species of *Poaceae* (*Graminae*) collected in this island, and to Mr.

[Mem. of the Fac. of Sci. and Agr., Taihoku Imp. Univ., Formosa, Japan, Vol. XI, December 1934].

A. KIMURA of the Tôhoku Imperial University who allowed me to use the specimens collected by him in the island in August 1922. Also he wishes to express his hearty gratitude to the late Dr. Y. KUDO, Prof. of Systematic Botany and Oecology in the Taihoku Imperial University for his advice in every way, to Mr. K. MORI of the Laboratory of Systematic Botany and Oecology of the University, who helped the author in drawing the maps which are used in the present paper and to Mr. M. KAWATA of the Forestry Experimental Station in Tokyo, who generously allowed him to use many photographs of the island taken by himself. Lastly the present author cannot conclude without expressing his sincere thanks to Dr. K. ÔSHIMA, Dean of the Faculty, to Prof. S. HIBINO, and Assist. Prof. Y. YAMAMOTO of the Taihoku Imperial University for their kindness in giving the author the privilege of making this study.

April, 1933.

Genkei MASAMUNE.

GENERAL REMARKS

When we look at a map of South Japan, we see a number of large and small islands stretching like stepping stones between the two great islands of Kyûsyû and Taiwan (Formosa). These form what is known as the Ryûkyû (Loochoo) Archipelago. Yakusima is a small island situated in the northern part of this Archipelago, and with the island of Tanegasima and the adjacent small islands, forms the so-called "Kumage" group. The island extends roughly from 30° 14' to 30° 28' latitude north and 130° 6' to 130° 0' east of Greenwich. (Fig. 13) It is somewhat pentagonal in shape; the coast is precipitous and sandy beaches are feebly developed. The area of the island is of about 78 square kilometers and it is 25 kilometers in width. The island is rather mountainous and the lowlands stretch feebly along the sea coast. The island itself forms a mountain group, of which the more elevated part is situated in the center of the island and is called Yaegatake. The highest peak of the Yae-

gatake is named Miyanouragadake which is 1938 m. above the sea level. This is not only the highest mountain in the island, but also in the main land of Kyûsyû and in the Ryûkyû Archipelago. A chart of this district shows that Yakusima is encircled within the 100-fathom line by the main land of Kyûsyû and by Tanegasima and other small adjacent islands, and that the island Yakusima is separated from Amami-Ôsima and from its neighbouring small islands by a deep channel. The fact that the southern part of Kyûsyû, Tanegasima, and Yakusima formed once an integral group and that, consequently, the island of Yakusima belongs physiographically to the main land of Kyûsyû has been pointed out by Dr. KOTO¹; a similar conclusion has also been reached along different lines by several zoogeographers, for instance, by Dr. WATASE from a study of the distribution of the termites, by Prof. AOKI and Dr. BRAUNS from their study of the mammals, and by Marquis KURODA from his investigation of the Avifauna. These and others who studied the distribution of the Fauna of southern Japan mostly came to the conclusion that the sea which lies between Amami-Ôsima and Yakusima separates the Oriental Region from the Palaearctic Region. This intervening channel is generally known by zoologists as the "Watase Line". On the other hand some scientists assert that the line of demarcation between these two regions is situated between the main land of Kyûsyû and Tanegasima. For instance, Dr. ESAKI asserts this view basing it upon the distribution of insects.

The problem of the phytogeographical position of the island of Yakusima has been discussed by several botanists such as Dr. WILSON,² Dr. NAKAI³ and Dr. KOIDZUMI.⁴ These botanists attribute some importance to the sea which separates the two islands, namely Amami-Ôsima and Yukusima, but their conclusions were derived from the

1. KOTO, B.; Great Eruption of Sakura-jima p. 22, 1916.
2. WILSON, E.; "The Liukiu Islands and Their Ligneous Vegetation" in Journ. Arnold Arb. I. pp. 171-181 (1920).
3. NAKAI, T.; 東亜植物區系 (1931).
4. KOIDZUMI, G.; "The Tokara Channel as the Floristic Demarcation Line" in Act. Phot. et Geogr. I. pp. 183-184 (1932).

study of the distribution of only some of the important determining elements. The problem, however, has not yet been discussed in connection with a thorough study of the flora of Yakusima. Upon investigating the flora of Yakusima, I have come to support the views held by those senior zoologists and botanists who consider that the sea intervening between the two islands of Amami-Ôsima and Yakusima, divides the flora of Japan into two districts. This argument does not always hold good for every group of the vegetable kingdom. For instance, while A-group of plants in Yakusima is closely related to the flora of the northern districts, B-group is related rather to that of the southern districts, and C-group offers data which coincide with the opinion of Drs. MIYAKE and ESAKI who, from the distribution of insects, argued that both Yakusima and Tanegasima belong to the southern districts. I propose to discuss the problem of the phytogeographical position of Yakusima, family by family, from this point of view in the latter part of this paper. On the whole the so-called Watase Line of the zoogeographers has also an important significance for phytogeography. This will become clearer if we take the flora of Amami-Ôsima into consideration, for there are quite a considerable amount of species and genera, and a few families which have their northern limit in this island (Amami-Ôsima). I wish to discuss the flora of Amami-Ôsima in detail in another paper, but here I will enumerate some plants which are not found in Yakusima and other places situated further north than Amami-Ôsima although they are found in Amami-Ôsima and some other lands further south viz:—*Alsophila formosana*, BAK., *A. podophylla*, HOOK., *A. pustulosa*, CHR., *Aspidium devexum*, KUNZ., *Dryopteris aurita*, CHR., *D. patens*, KUNTZE, *Pinus luchuensis*, MAY., (This species is found in Akuseki Island but not in Yakusima.) *Pandanus tectorius*, SOL., (Pandaneae are found in Akuseki Isl. but not in lands further north than this island.) *Enhalus Koenigii*, RICH., (not only the species but also this genus has its northern limit at Amami-Ôsima) *Manisuris granularis*, SW., *Sporoborus virginicus*, KUNTH, *Thuarea sarmentosa*, PERS., *Alocasia cucullata*, SCHOTT, *Commelina obliqua*, HAM., *Heterosmilax japonica*,

KUNTH, *Castanopsis formosana*, HAY., *Trema amboinensis*, BL., *T. virgata*, BL., *Ficus Beecheyana*, HK. et AR., *F. vasculosa*, WALL., *Sesuvium portulacastrum*, LINN., *Drymaria cordata*, WILLD., *Illicium Tashiroi*, MAX., *Cinnamomum Doederleinii*, ENGL., *Senebiera integrifolia*, DC., *Itea chinensis*, HOOK. et ARNOTT, *Osteomeles anthyllidifolia*, LINDL. var. *subrotunda* (KOCH), *Photinia Maximowiczii*, DECNE., *Rosa ampullicarpa*, KOIDZ., *Derris uliginosa*, BENTH., *Indigofera liukiensis*, MAK., *Mucuna gigantea*, DC., *Ormocarpus sennoides*, DC., *Sophora tomentosa*, LINN., *Thermopsis chinensis*, BENTH., *Citrus depressa*, HAY., *Toddalia aculeata*, PERS., *Alchornea liukiensis*, HAY., *Croton Cumingii*, MUELL-ARG., *Exoecaria Agallocha*, LINN. var. *genuina*, MUELL-ARG., *Glochidion bicolor*, HAY., *G. Fortuni*, HANCE, *Macaranga Tanarius*, MUELL-ARG., *Phyllanthus Niruri*, LINN., *Putranjiva Matsumurae*, KOIDZ., *Ilex cinerea*, CHAMP., *I. Mertensii*, MAX., *Euonymus Spraguei*, HAY., *Gymnosporia diversifolia*, MAX., *Meliosma lutchuensis*, KOIDZ., *M. rhoifolia*, MAX., *Berchemia lineata*, DC., *Columella corniculata*, (PLANCH.), *Abelmoschus moschatus*, MEDIA, *Heritiera littoralis*, AIT., *Actinidia latifolia*, NAK., *Camellia Miyagii*, KOIDZ., *Eurya symplocina*, BL., *Schima liukiensis*, NAK., *Barringtonia racemosa*, BL., (Lecythidaceous plants are not yet reported in lands further north than Amami-Ōsima) *Shortia rotundifolia*, MAK., *Rhododendron ellipticum*, MAX., *R. subanceolatum*, MIQ., *Vaccinium Wrightii*, A. GRAY, *Statice sinensis*, GIRARD, *Bobua modesta* (BRAND.), *B. Sonoharai*, (KOIDZ.), *Fraxinus insularis*, HEMSL., *Ligustrum liukiense*, KOIDZ., *Osmanthus bracteatus*, MATSUM., *Cerbera odollam*, GAERTN., *Marsdenia tinctoria*, R. BR., *Ipomoea palmata*, FORSK., *Ehretia buxifolia*, ROXB., *E. macrophylla*, WALL., *Tournefortia argentea*, LINN. f., *Premna integrifolia*, LINN., *Ajuga bracteosa*, WALL., *Leucas mollissima*, WALL., *Salvia pygmaea*, MATSUM., *Solanum verbascifolium*, LINN., *Dicliptera chinensis*, NEES, *Diplospora viridiflora*, DC., *Randia canthioides*, CHAMP., *Damnacanthus biflora* (REHD.) *Thysanosperrum diffusum*, CHAMP., *Wendlandia formosana*, COWAN, *Viburnum Sandankwa*, HASSK., *Bryonopsis laciniosa*, NAUD., *Trichosanthes bracteata*, VOIGHT, *Campanumaea truncata*, DIELS, *Ainsliaea Okinawensis*, HAY., *Erigeron Miyagii*, HONDA, *Crossostephium chinense*, MAK., etc..

A Brief History of Botanical Explorations in the Island.

So far as I am aware, the first botanist to collect plants in this island was Mr. ÔWATARI whose name is commemorated in the name of "Pseudosasa Owatarii". He visited the island in 1890 and the specimens gathered by him are preserved in the Herbarium of Tôkyo Imperial University. The next botanist was Dr. Y. KUDO who visited the island in 1907 and 1908. He collected many of the plants of the island and specimens of Yakusiman plants were made, among which some were reported as new species such as *Gentiana yakushimensis* (*Kudoa yakushimensis*) and *Wikstroemia Kudoi*. In 1908 Dr. MAKINO made a botanical excursion to this island and collected a large number of herbaceous and ligneous plants, and as a result of the visit the following new plants were described by him in the Tôkyo Botanical Magazine: *Polypodium Engleri*, var. *yakushimense*, *Euonymus yakushimensis*, *Wikstroemia Kudoi*, *W. pauciflora*, var. *yakushimensis*, *Pedicularis Ochiaiana*, etc.. Several other botanists also visited the island at various times, e.g. Drs. IKENO, KUSANO, FUJII, YOSHII, MM. KIMURA, KODAMA, TAKENOUCHI, TASHIRO, KAWATA and Father FAURIE. Some of them collected plants and some studied the magnificent *Cryptomeria* forest. I visited the island eight times during the years 1922-31 and explored various parts of the island making a fair collection of vascular plants which became the basis for the present work. I have not yet had the opportunity to see all the collections of the above mentioned botanists, but fortunately through the kindness of Dr. HAYATA I was able to study some of Dr. YOSHII's and Mr. OWATARI's collections which are now preserved in the Herbarium of the Botanical Institute of the Tôkyô Imperial University. I was also allowed to look over the whole collection of Mr. A. KIMURA in his private herbarium and a part of the collection of Dr. KUDO preserved in the Herbarium of the Agricultural College of Kyûsyû Imperial University and in the Herbarium of Taihoku Imperial University. As for my own collection, a large portion of it is kept in the Herbarium of the Botanical Institute of Tôkyô Imperial

University and a part of it in the Herbarium of Taihoku Imperial University and of the New York Botanic Gardens.

Climatic Features and Geology of the Island.

The island is situated on the western edge of the Oriental Gulf-stream or "Kuroshio" by which the climate is very naturally influenced. The climate of the island is agreeable and healthy, but owing to the lack of a meteorological observatory, reliable climatical data are not available for the island. In spite of this one may gain a general idea of the climate of the island from the following tables.

Rainfall in Yakusima in millimeters.

| Stations | Months | | | | | | | | | | | |
|---------------------------|--------|------|-------|-------|-----|------|------|------|-------|------|------|------|
| | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
| Kosugidani Forest-Station | 292 | 413 | 472 | 403 | 652 | 1105 | 566 | 938 | 1125 | 649 | 359 | 359 |
| Nagata Lighthouse | 203 | 166 | 180 | 288 | 242 | 609 | 334 | 381 | 263 | 276 | 235 | 171 |
| Onoaida Village Office | 48 | 130 | 230 | 364 | 251 | 419 | 284 | 531 | 389 | 342 | 212 | 40 |
| | | | | | | | | | | | | 3259 |

Note Kosugidani is situated nearly in the center of the island about 650 m above the sea level.

Nagata Lighthouse stands on the extreme point of the north western side of the island.

Onoaida Village Office is on the southern part of the island

Temperature (mean C°).

| Stations | Months | | | | | | | | | | | |
|---------------------------|--------|------|-------|-------|-----|------|------|------|-------|------|------|------|
| | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
| Kosugidani Forest-Station | 10 | 7 | 10 | 13 | 16 | 22 | 25 | 26 | 19 | 17 | 13 | 10 |
| Nagata Lighthouse | 11 | 12 | 15 | 18 | 21 | 25 | 28 | 28 | 27 | 22 | 18 | 14 |
| Ambo Forest Office | 16 | 16 | 17 | 20 | 25 | 25 | 28 | 29 | 28 | 26 | 22 | 17 |

Note: Ambo Forest Office is situated near the sea level on the eastern part of the island.

As has been remarked above, it will be seen that the climate of the lower part of the island is warm and moist in summer and somewhat cooler and less moist in winter. These climatic conditions lead one to conclude that the physiognomy of the vegetation of the island will coincide with that of the so-called Laurisilvae which has some affinity with the Pluviusilvae. I will discuss this problem in the latter part of this paper.

Not having seen any geographical and geological survey of this island, I availed myself of every opportunity to verify the geological data in spite of my insufficient knowledge in this direction, and finally came to the following conclusions: the island is built up of a kind of batholithic granite which intruded into the mesozoic stratum of slate and sandstone. This is proved by the fact that the mesozoic rock that has undergone contact metamorphosis is found in lower part of the island. This granite is also observed in the central and in the north-eastern part of the island and the mesozoic slate and sandstone, encircling this granite rock just like a horseshoe, is found along the sea coast. (Fig. 1.) I would add here that several parts of the island are covered with a thin layer of lapilli, pumice and other substance of volcanic nature and that in the lower part of the island, along the sea shore, a quaternary deposit is found which specially abounds on the south-eastern side of the island. These geological features are quite in agreement with the oecological distribution of plants in the island. This problem will be discussed later.

PHYTOGEOGRAPHY OF THE ISLAND OF YAKUSIMA.

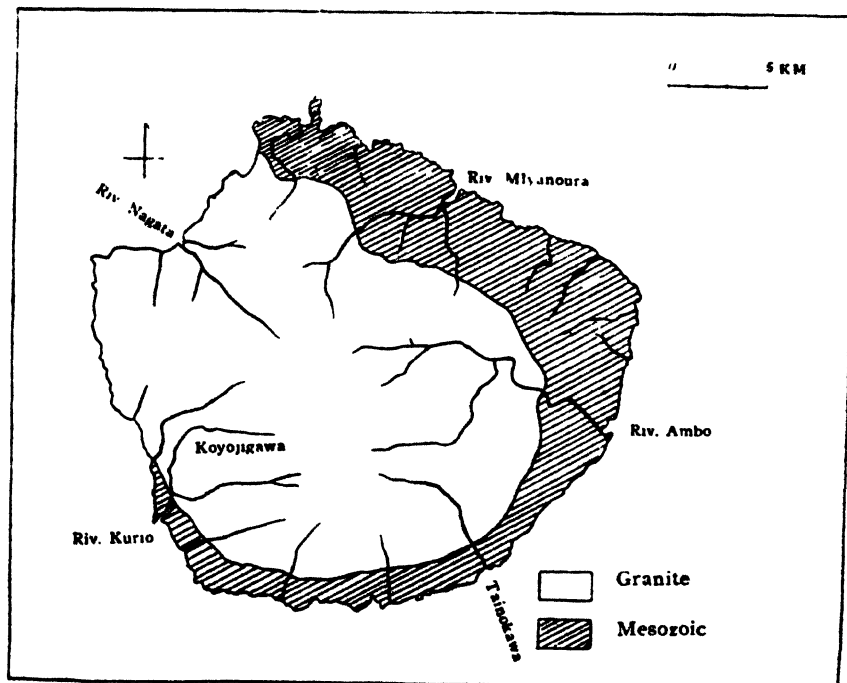
Characteristics of the Flora of the Island.

The number of species, varieties, and forms which are enumerated in this paper amounts in all to 1143. The families which are comparatively rich in genera and species (including varieties and forms) are shown in the following tables with their ratio to the whole number of genera or species in the island.

| Families | Number of genera | Ratio to the whole number of genera. (562) in % | Families | Number of plants | Ratio to the whole number of species, varieties, and forms (1143), in % |
|---------------|------------------|---|---------------|------------------|---|
| Gramineae | 44 | 7.8 | Polypodiaceae | 149 | 13 |
| Compositae | 39 | 6.9 | Gramineae | 78 | 6.7 |
| Polypodiaceae | 34 | 6 | Compositae | 70 | 6 |
| Orchidaceae | 34 | 6 | Orchidaceae | 68 | 5.9 |
| Liliaceae | 21 | 3.7 | Cyperaceae | 52 | 4.5 |
| Fabaceae | 21 | 3.7 | | | |

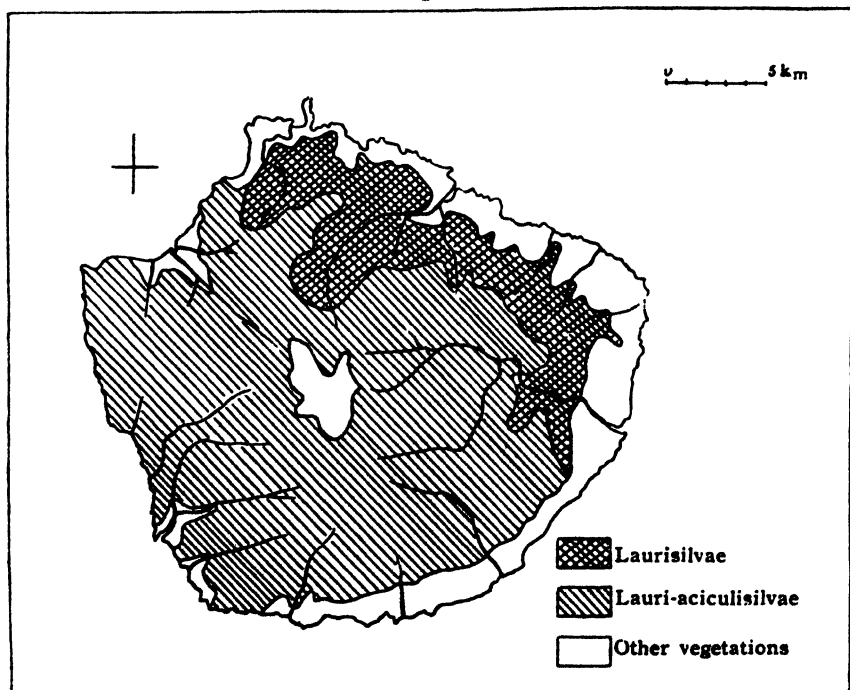
So far as the floristic relation of the island to its neighbouring districts is concerned, I shall study it in detail when enumerating

Fig. 1.



the plants in the island, so I will not deal with this question here except for a few words explaining why I observed every family in order to study this problem. In my opinion, each taxonomical group of plants such as, family, genus, or order, etc. has a different center of distribution and each of them consequently has a different range of distribution, some groups coinciding with each other, others differing in their geographical range of distribution. When I had summed up all the species, varieties, and forms and made the ratio which indicates their relation to the neighbouring districts, I obtained the following figures which denote some aspects of the phytogeographical relation of the island to its neighbouring floral districts. The number of species, varieties, and forms indigenous to the island amounts to 1143,

Fig. 2.



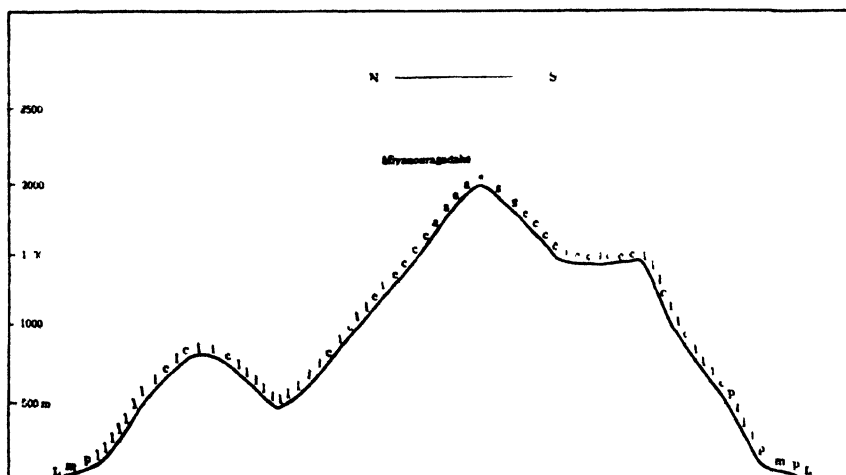
76% of which is found in Kyûsyû, 67% in Honsyû, 63% in Sikoku and 52% in Amami-Osima. So it may be said the island is most closely related to Kyûsyû, after that to Honsyû, and Sikoku.

THE ISLAND SEEN FROM THE OECOLOGICAL POINT OF VIEW.

I. Relation between plant distribution and nature of ground.

As I have already stated, geological construction plays an important part in constructing formation and association of plants. The relation between oecological distribution of plants and the geological construction can easily be seen in the distribution of coniferous plants and ever-green broad leaved trees in the island. As shown on the geological maps (Fig. 1 & 2), it appears that the ever-green broad leaved trees usually predominate on mesozoic slate, and the coniferous plants predominate on granite ground. I can not clearly explain why there exists such a difference in distribution due to geological structure. This may be said, however, that the conifers are somewhat more light loving plants than the ever-green dicotyle-

Fig. 3.



Diagrammatic Profile from Sitogo to Hirauti.

- S. *Pseudosasa Owatarii* (Representative of the *Pseudosasa Owatarii* Association)
- C. *Cryptomeria japonica* (Representative of *Aciculisilvae*).
- I. *Laurilignosa*.
- p. *Pinus* spp.
- m. *Miscanthus* (Representative of Submountain zone).
- L. Littoral plant.

donous trees, and since granite of the island has a more crumbly nature than slate, a crumbled surface often occurs on it which affords the light-loving conifers a better chance to invade it than the ever-green broad-leaved dicotyledonous trees.

I have shown in the appended map and in Fig. 3. the altitudinal zonation of the vegetation of Yakusima and here I will try to give some explanation for it. I have divided the vegetation of the island into the following groups for the sake of convenience.

1. Littoral Zone.
2. Submountain Zone.
3. Zone of Laurisilvae.
4. Zone of Lauri-aciculisilvae.
5. Pseudosasa Owatarii Association.

1. Littoral Zone (Formation)

The littoral zone occupies a very small area that stretches along the sea shore and includes beach, coast, and estuaries of rivers and streams. In this region there are three federations, i.e. that of Lithophyte, that of *Bladhia Sieboldii* and that of Psammophyte.

Federation of Lithophyte. This federation expands on rocks by the sea shore or on cliffs and is made up of various sociations. I describe below some of the more important sociations. *Statice arbuscula sociation.* This develops on the surface of rocks scattered on the beaches and often submerged at high tide. It is composed of pure stand of *Statice*, but sometimes it is accompanied with *Philoxerus Wrightii*, *Oldenlandia diffusa*, *Lysimachia mauritiana*, *Sedum uniflorum*, *Erythraea spicata*, etc., and often it is temporarily invaded by cosmopolitan species. Though this sociation is remarkable in the island, it occurs only over a small area in the southern and northern parts of the island. It is worthy of notice, however, that while it is widely found in lands further south than Yakusima, it has its northern limit of existence in this island. Under nearly the same conditions, the following sociations also develop: *Philoxerus Wrightii*

Sociation, *Zoysia tenuifolia* sociation, etc.. *Cinnamomum daphnoides* association. The association spreads on rocky cliffs and on the ground near the sea shore and is composed of the following trees, shrubs, and herbaceous plants; *Cinnamomum daphnoides*, *Raphiolepis umbellata*, *Pinus Thunbergii*, *Daphniphyllum macropodium*, *Eurya emarginata*, *Litsea japonica*, *Euonymus japonicus*, *Crepidiastrum lanceolatum*, var. *typicum*, *Lysimachia mauritiana*, *Peperomia japonica*, *Odontosoria chinensis*, *Dianella ensifolia*, etc..

Bladhia Sieboldii Federation. This federation develops near the sea shore where the ground is somewhat rocky and has more undergrowth, lianes, and epiphytes than in the *Cinnamomum* association. The federation has a tendency to separate itself into two associations, *Litsea* Association and *Bladhia* Association. In *Litsea* association more accompanied species occur than in the *Cinnamomum* association. I will now describe the members of the plants which constitute the association. *Pinus Thunbergii*, *Bladhia Sieboldii*, *Rapanea neriifolia*, etc. are the members that constitute the higher zone of the association, *Ligularia tussilaginea*, *Odontosoria chinensis*, *Polypodium Wrightii*, *Pleioblastus Hindsii*, *Eurya emarginata*, *Oplismenus compositus*, *Peucedanum japonica*, and *Nephrolepis cordifolia* are found as undergrowth in the *Litsea* Association. In the *Bladhia* association apart from the dominant species, *Bladhia Sieboldii*, there occur *Pinus Thunbergii*, *Cinnamomum daphnoides*, *Litsea japonica*, *Rapanea neriifolia*, *Shiia cuspidata*, *Cudrania cochinchinensis*, *Pittosporum Tobira*, *Oreocnide fruticosa*, *Eurya emarginata*, *Elaeagnus glabra*, *Oreocnide pedunculata*, *Elaeagnus macrophylla*, *Pleioblastus Hindsii*, *Ligustrum japonicum*, *Kuromatea edulis*, *Citrus* sp. etc.. Among the lianes, *Piper futokadsura*, *Lonicera japonica*, *Cynanchum japonicum*, *Hoya carnosa*, *Tylophora Tanakae*, *Paederia chinensis*, *Smilax stenopetala*, *Clematis Meyeniana*, *C. Pierotii*, *Gynostemma pentaphyllum* may be seen and among the epiphytes, *Neottopteris nidus*. In the rich humus soil in the *Bladhia* association *Alocasia macrorrhiza*, *Liparis nervosa*, *Alpinia chinensis*, *Polystichum falcatum*, *Achyranthes japonica*, var. *hachijoensis*, *Polypodium Wrightii*, *Polystichum aculeatum*,

var. *japonicum*, *P. aristatum*, *Selaginella atroviridis*, *Oplismenus compositus*, *Carex ligata*, var. *strictior*, *Arisaema ringens*, and *Goodyera yakushimensis* are found as undergrowth. In the above mentioned associations sometimes mingle herbaceous consociations like *Miscanthus consociation* and *Imperata consociation*, etc. which are in the invading stage of development. The consociations covered with these grasses are invaded by the species which are temporarily found in them such as *Elaeagnus crispa*, *E. macrophylla*, *Clerodendron yakusimensis*, etc., in the course of a long time the area will be occupied once more by the above mentioned species of the association. It is an interesting fact that *Pinus Thunbergii* is found both in the associations and consociations. I think the pine is one of the invaders in the early stages, when the above mentioned associations have not yet reached the stage of climax but are still in that of development, and the pine and other secondary plants are not yet exterminated in the associations. This should be proved by the fact that we only find old trees of pine in the associations but no young

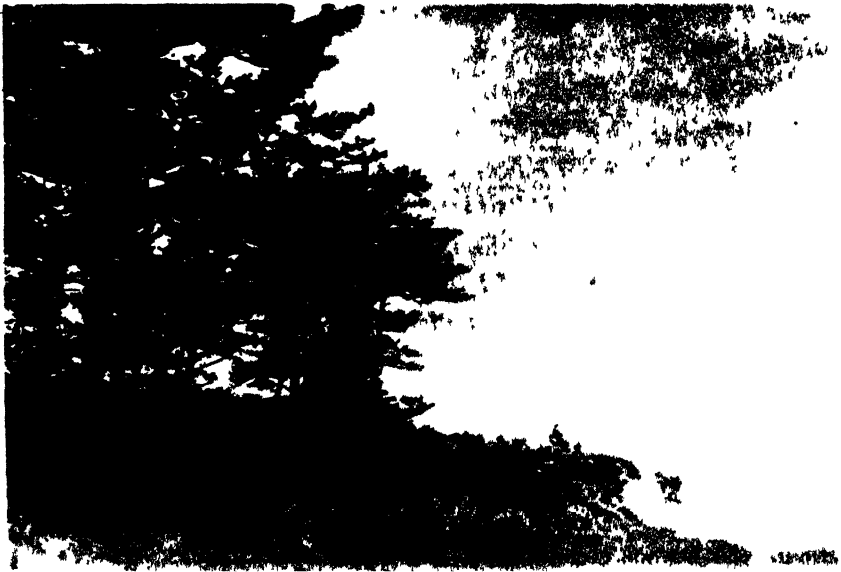


Fig. 4.

Phot. KAWATA.

Forest of *Pinus Thunbergii*, invaded and replaced by ever-green broad-leaved trees in the Littoral Zone.

ones. (Fig. 4.) Apart from these consociations there is one more conspicuous consociation which is found on dry land and is composed of *Rhododendron Tamurai* and other shrubs like, *Eurya emarginata*, *Vaccinum bracteatum*, etc..

Federation of Psammophyte (Sandy-Beach Federation)

The federation extends on sandy beaches where the soil is mostly composed of sand and pebbles produced by the cracking of granite rocks, mingled with fragments of sedimentary rocks and those of shells and coral. In the federation there are many sociations some of which I shall mention here. In the pebbly soil there develops the *Canavalia lineata* sociation. This sociation is composed of the following elements: *Canavalia lineata*, *Vigna marina*, *Wedelia chinensis*. These are the characteristic plants of the sociation while the following companionate plants are found: *Lysimachia mauritiana*, *Peucedanum japonicum*, *Ipomoea pes-caprae*, *Rumex japonicus*, *Crinum asiaticum*, var. *japonicum*, *Elaeagnus crispa*, var. *subcoriacea*, *Lathyrus maritimus*, *Panicum repens*, *Zoysia tenuifolia*, *Ischaemum anthephroides*, var. *eristachyum*, *Vitex rotundifolia*, etc.. This sociation develops in nearly all the sandy and pebbly beaches of the islands. In the sandy soil the following sociations are seen. *Panicum repens* sociation. The sociation has an inclination to develop on somewhat wet places but sometimes also on tolerably dry pebbly soil. The sociation frequently develops in the submountain region in wet places and very often as a pure stand of *Panicum repens* which is a characteristic species of the sociation, while as companionate species, I found *Wedelia calendulacea*, *Persicaria Thunbergii*, *Rumex japonicus*, *Spinifex squarrosus*, *Vitex rotundifolia*, etc.. A typical example of the sociation is found near the estuary of the Kurio River where the sociation spreads over a considerable tract. *Spinifex squarrosus* sociation. The sociation is found in dryer places than the above *Panicum* sociation and in the island it develops in one place, that is, near the estuary of the Kurio River, adjoining to the *Panicum repens* sociation, and extends to the southeast along the sea where the soil is sandy

and much drier than that of the *Panicum repens* sociation. The characteristic plant of this sociation is, of course, the *Spinifex*, and as companionate plants we can see the following : *Cassytha filiformis*, *Panicum repens*, *Ischaemum antheophroides*, *Vitex rotundifolia*, *Crinum asiaticum*, var. *japonicum*, *Rosa Wichuraiana*, *Ipomoea pes-caprae*, *Calystegia soldanella*, *Wedelia chinensis*, *W. chinensis*, var. *robusta*, *Peucedanum japonicum*, *Phellopterus littoralis*, *Angelica kiusiana*, *Chenopodium acuminatum*, var. *japonicum*, etc.. The sociation is a characteristic one in the littoral region of tropical and subtropical seashores and it is a remarkable fact to find this sociation developing so flourishingly in the island, even though it has its northern limit of habitat in this island. *Cassytha filiformis* sociation. I know it is unnatural to choose such a parasitic plant as a characteristic one, but the parasites flourish so well here that if we set a quadrat of 10 cm. square on any piece of land where the sociation develops we shall certainly find parasites in it. The hosts of the parasite that grow in this sociation are nearly all of the same species as the plants of the preceding sociation. *Ipomoea pes-caprae* sociation. The sociation develops on sandy places and its companionate plants are rather few. I found in the sociation the following species as companionate species : *Ischaemum* spp., *Lactuca repens*, *Calystegia soldanella*, *Lippia nodiflora*, etc.. In drier places the species of *Ischaemum* predominates and forms a consociation with it ; the following plants are quoted as its companionate elements : *Crinum asiaticum*, var. *japonicum*, *Calystegia soldanella*, *Lysimachia mauritiana*, *Angelica kiusiana*, *Rumex japonicus*, *Panicum repens*, *Zoysia tenuifolia*, etc.. Some further sociations are found in this federation in the island but as they are not very remarkable I will not mention them specifically.

Mangrove Formation.

In the island on the estuary of the Kurio River there develops a trace of Mangrove formation composed of *Kandelia candel*, *Hibiscus hamabo*, *Maackia Tashiroi*, *Cladium mariscus*, etc.. This formation is

also found in Tanegasima and Kiire (in Prov. Satuma, Kyûsyû) more northerly districts than this island, but there is considerable doubt as to whether the plant in Kiire must not have been introduced from some other district. It is believed the *Kandelia* sociations of this island and of Tanegasima are the most northerly representatives of the Mangrove forest. From this fact we may conclude that the Strait of Ôsumi which lies between Tanegasima and Kyûsyû has a deep significance as being the line of demarkation dividing the distribution of the Mangrove formation, and this conclusion agrees with the opinions reached by the entomologists (Drs. MIYAKE and ESAKI), who have concluded that the strait divides the entomological fauna into Palaeoarctic and Ind-Oriental regions.

Swamp and Aquatic Societies

In this zone there are few marshes, ponds, or moors worthy of mention, so that this society develops only on the borders of rivers and rice fields, and its development is very feeble. The following associations form the society. *Cladium association*. This is found in wet places near the estuaries of rivers and it is one of the associations which compose the society. *Podostemon Formation*. The formation is represented by *Hydrobrium sociation* composed of only one species of *Hydrobrium*. It is found on rocky surfaces of the River Issô, where the river passes from the mountain region into the plain. Though this is found in the southern part of Kyûsyû, it has not yet been found in other parts of Japan.

2. Submountain Zone.

The zone extends from the upper part of the littoral region to about 100 m above the level of the sea and chiefly on the sea-eroded surface on the eastern side of the island which was recently raised. The soil on the eastern side is composed of sand, gravel and laterite like mud while the zones on the western and northern sides are composed of granite soil with gravel, sand and conglomerate rocks.

This region has been changed artificially and now it is cultivated and occupied by villages, virgin forests being seen only near the river side where the ground is steep, and in the sacred grove by the village shrine. From the above mentioned facts it naturally follows that two formations are found in this region, one of which is grassland and the other laurisilvae (composed of ever-green broad-leaved trees of Plurifrutices and laurilignosae). The former is a secondary society that developed in the area after the latter had been destroyed. In the grassland we can observe the following associations. *Miscanthus Association*. This association develops on both gravel and sandy soil or on laterite like mud, and its chief components are as follows; *Eurya emarginata*, *Bobua japonica*, *Smilax china*, *Hypoxis aurea*, *Lycoris radiata*, *Rhaphiolepis umbellata*, *Osbeckia chinensis*, *Centranthera Brunoniana*, *Quercus Wrightii*, *Pteridium aqualinum*, var. *japonicum*, *Pinus Thunbergii*, *Elaeagnus crispa*, var. *typica*, *Trema orientalis*, *Imperata cylindrica*, var. *Koenigii*, *Miscanthus sinensis*, *M. sinensis*. var. *condensatus*, *Panicum repens*, *Pleiblastus Hindsii*, *Smilax stenopetala*, *Dianella ensifolia*, *Myrica rubra*, *Cudrania cochinchinensis*, var. *gerontogea*, *Helicia cochinchinensis*, *Achyranthes japonica*, *Cocculus trilobus*, *Lindera citrata*, *Macleya cordata*, *Drosera rotundifolia*, *Pittosporum tobira*, *Rosa polyantha*, var. *genuina*, *Rubus Sieboldii*, *R. trpihyllus*, *Desmodium laburnifolium*, *Pueraria Thunbergii*, *Polygala japonica*, *Glochidion hongkongense*, *G. obovatum*, *Phyllanthus flexuosus*, *Rhus semialata*, var. *Osbeckii*, *Celastrus articulatus*, *Triumfetta japonica*, *Hibiscus mutabilis*, *Sida rhombifolia*, *Urena lobata*, var. *tomentosa*, *Eurya japonica*, *Hypericum erectum*, *Viola grypoceras*, *V. oblongosagittata*, *Stachyurus lancifolia*, *Wikstroemia gampi*, *Elaeagnus pungens*, *Centella asiatica*, *Hydrocotyle javanica*, *Rhododendron Tamurai*, *Buddleia curviflora*, var. *venenifera*, *Mitrascme polymorpha*, *Cynanchum japonicum*, *Dichondra repens*, *Ipomoea indica*, *Clerodendron yakusimense*, *Ajuga decumbens*, *Solanum xanthocarpum*, *Aeginetia japonica*, *Justicia procumbens*, *Plantago major*, var. *asiatica*, *Paedaria chinensis*, *Ebulus chinensis*, *Lonicera japonica*, *Aster indicus*, *Bidens pilosa*, *Chrysanthemum ornatum*, *Senecio sonchifolia*, *Siegesbeckia orientalis*, etc.. In

this association we can distinguish several consociations, such as the *Ischaemum* consociation, the *Pleioblastus* consociation, the *Phylostachis* consociation, the *Dicranopteris dichotoma* consociation, etc.. *Ischaemum* Consociation. This specially develops on bare ground due to burning, clearing, wasting of cultivated land, land slides, or crumbling. In the consociation except *Ischaemum*, we find *Elaeagnus crispata*, var. *rotundifolia*, *Curculigo orchioidea*, *Hypoxis aurea*, *Dicranopteris dichotoma*, *Aneilema nudiflorum*, *Mitrascme polymorpha*, *Lespedeza cuneata*, *Centranthera Brunoniana*, *Gnaphalium multiceps*, *G. japonicum*, *Chenopodium bryoniaefolium*, *Salomonina ciliata*, *Osbeckia chinensis*, etc.. This consociation is rather a consociation and develops into a *Miscanthus* association which will be invaded by the ever-green broad leaved trees and will become the association of laurisilvae. Following the invasion of *Pinus Thunbergii* the *Miscanthus* association becomes the *Pinus Thunbergii* Association. But this association is in turn invaded by ever-green broad-leaved trees and becomes the association of laurisilvae. *Pinus Thunbergii* Association. The constitution of this association is almost similar to that of the *Miscanthus* association, but when *Pinus Thunbergii* once invades the *Miscanthus* association, the plants that constitute the *Miscanthus* association and the light-loving species gradually die away and instead of them shade-loving evergreen trees and shrubs begin to predominate under the shelter of *Pinus Thunbergii*, until at last, the seedling of the *Pinus* itself can not unfold and the invading species gradually drives out the former dwellers and establishes its own association.

The Ever-Green Broad-Leaved Tree Formation.

The formation is almost the same as the next formation,—laurigeneous vegetation, and although there is no need to separate this formation from it, I do so because this association is a transitional one that stands between the littoral zone and that of the laurisilvae. In this formation we can find the following plants: *Shiia cuspidata*, *S. Sieboldi*, *Glochidion obovatum*, *Michelia compressa*, *Bladhia quinqueгона*, *Bobua nerifolia*, *B. glauca*, *Meliosma rigida*,

Myrica rubra, *Trachelospermum asiaticum*, *Piper futokadsura* (Pl. VI. Fig. 3.) *Anodendron affine*, *Erycibe aculifolia*, *Ourouparia rhynchophylla*, *Maesa sinensis*, *Nauclea orientalis*, var. *macrophylla*, *Eugenia Jambos*, *Machilus Thunbergii*, *Diospyros nipponica*, *Bobua kotoensis*, *B. japonica*, *Styrax japonica*, *Euonymus Sieboldianus*, *Helicia cochinchinensis*, *Ficus Wightiana*, (Fig. 5.) *F. erecta*. *Kuromatea edulis*, *Cyclobala-*

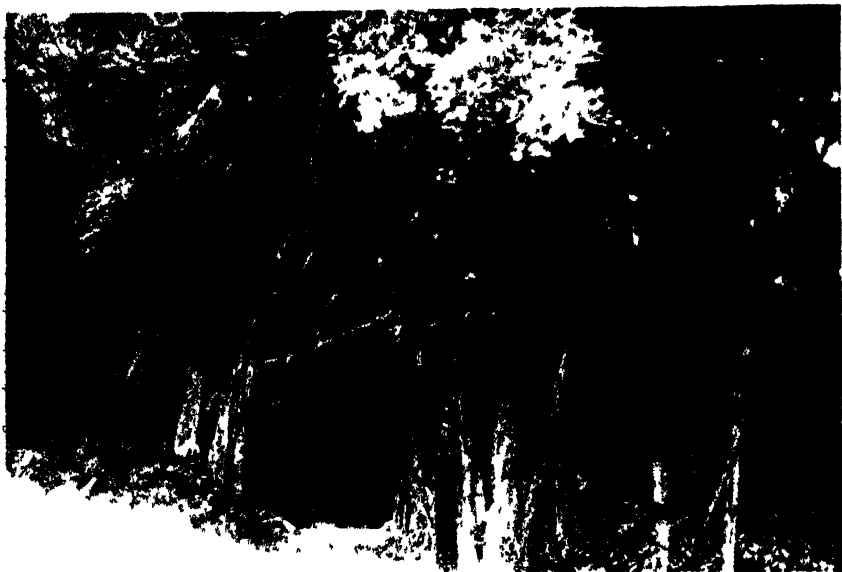


Fig. 5.

Phot. KAWATA.

Ficus Wightiana in the Submountain Zone.

nopsis Miyagii, etc.. As undergrowth and parasitic or mycorrhiza plants we can find *Mitrastemon Yamamotoi*, *Aphyllorchis tanegashimensis*, *Burmanna cryptopetala*, *Lecanorchis japonica*, and ferns like *Diplazium Taquetii*, *D. latifolium* (Fig. 6.) *D. fraxinifolium*, *Alsophilla acaulis*, *Polypodium Hancockii*, *Hypodematum crenatum*, *Drymoglossum microphyllum*, *Polypodium ensatum*, *P. ellipticum*, var. *pothifolium*, *Histiopteris insisa*, *Lycopodium serratum*, *Selaginella atroviridis*, and *S. caulescens*. As epiphytes the following predominate: *Neottopteris nidus*, *Lycopodium subdistichum*, *L. Phlegmarii*, *L. tereticaule*, *Lysionotus pauciflorus*, *Ophioderma pendulum*, *Vittaria elongata*, *Ophiopogon Jaburan*,

Dendrobium tosaense, *Aerides japonicum*, *Finetia falcata*, *Liparis plicata*, *Luisia teres*, etc.. We can divide this association into several consociations, for example, *Shiia cuspidata* consociation, *Bladhia Sieboldii*



Fig 6.

Phot. KAWATA.

Diplazium latifolium growing as undergrowth in the Submountain Zone.

consociation, *Cyclobalanopsis* consociation, etc.. I should like to draw attention to the fact that there is a remarkable sociation of pure stand of *Rhapis humilis* in the grove of the village shrine at Hirauti. This sociation perhaps came through human agencies but none the less this does not affect its value, moreover it is interesting to find this species in such a state in this island because at present the species is not yet found growing in its wild state in any part of Japan except in this place.

3. Zone of Laurisilvae.

The laurisilvae being almost destitute of coniferous plants, extends from the upper part of the previous belt to about 800 m above the sea level in the north east of the island. This mode of

distribution of *laurilignosa* and *aciculignosa* has a profound relation to the nature of the soil where the trees stand, as I have already mentioned in this paper. (Fig. 1.2.) The formation seems to have an inclination to develop on sedimental rocks. It extends as high as 800 m above the sea level in the north-eastern part of the island where the sedimental rocks occur, while on the contrary, on the south-western flank of the island where the granite rocks prevail, this formation is feebly developed. The trees and shrubs that compose the formation are as follows: *Ternstroemia Mokof*, *Shiia cuspidata*, *S. Sieboldi*, *Illicium anisatum*, *Diospyros nipponica*, *Prunus macrophylla*, *Osmanthus Zentaroanus*, *Stewartia monadelphica*, *Lagerstroemia Fauriei*, *Microtropis japonica*, *Neolitsea foliosa*, *Cinnamomum japonicum*, *Cyathea boninsimensis*, *Ilex mutchagara*, *Carpinus laxiflora*, *Sakakia ochracea*, *Podocarpus nagi*, *Lindera Thunbergii*, *Gilibertia trifida*, *Fagara piperita*, *Cyclobalanopsis Miyagii*, *C. acuta*, *Callicarpa yakusimensis*, *Acer insulare*, *Euscaphis japonica*, *Machilus Thunbergii*, *M. japonica*, *Agalma luchuense*, *Actinidia longifolia*, *Turpinia ternata*, *Psychotria Reevesii*, *Camellia japonica*, var. *macrocarpa*, *Ilex pedunculosa*, *I. integra*, *I. Hancenan*, *Myrica rubra*, *Aucuba japonica*, *Bladhia quinquegona*, *Tarenna zeylanica*, *Aleurites cordata*, *Daphniphyllum macropodium*, *Rhododendron Tashiroi*, *Styrax japonica*, *Syzygium buxifolium*, etc.. While as lianes we can find the following species: *Ouroparia rhynchophylla*, *Lonicera hypoglauca*, *Anodendron affine*, *Vitis ficifolia*, var. *Thunbergii*, *Ampelopsis heterophylla*, *Erychibe acutifolia*, *Smilax Sieboldii*, *S. China*, *Vitis flexuosa*, *Hedera Tobleri*, *Rhus Toxicodendron*, var. *vulgaris*, *Piper futokadsura*, *Trachelospermum asiaticum*, var. *intermedium*, *Pureria Thunbergii*, *Dioscorea japonica*, *D. bulbifera*, *D. Tokoro*, *Actinidia callosa*, var. *ruja*, *Stauntonia hexaphylla*, *Clematis crassifolia*, *C. paniculata*, *Marsdenia acuta*, *Hoya carnosae*, *Stephanotis japonica*, etc.. As epiphytes the following species are seen: *Vittaria japonica*, *Neottopteris Nidus*, (Pl. III. Fig. 2.) *Polypodium formosanum*, *P. lineare*, *Asplenium Sarelii*, *A. Nakanoanum*, *Trichomanes auriculatum*, *Lysionotus pauciflora*, *Dendrobium monile*, *Aerides japonicum*, *Luisia teres*, *Oberonia Makinoi*, *Liparis plicata*,

Bulbophyllum drymoglossum, *B. inconspicuum*, *Cirrhopetalum japonicum*, *Lycopodium sudistichum*, *L. tereticaule*, *Humata repens*, *Finetia falcatum*, *Psilotum nudum*, etc.. Under these trees and shrubs we find as undergrowth: *Lecanorchis japonica*, *L. purpurea*, *Burmannia cryptopetala*, *B. Itoana*, *B. japonica*, *Sciaphila japonica*, *Didymoplexis japonica*, *Galeola septentrionalis*, *Monotropa uniflora*, all of which are mycorrhiza plants. We also find the following ferns: *Diplazium Taquetii*, *Dennstaedtia scabra*, *Diplazium lanceum*, *Lindsaya cultrata*, *Alsophylla acaulis*, *Athyrium Nakanoi*, *A. rigescens*, *Diplazium Morii*, *D. maximum*, *Plagiogyria japonica*, *P. euphlebia*, *Cystopteris japonica*, *Woodwardia Harlandii*, var. *Takeoi*, *Diplazium Fauriei*, *D. fraxinifolium*, *Hymenophyllum integrum*, *H. barbatum*, *H. crispatum*, *Cheiropleuria bicuspis*, var. *integrifolia*, *Cyclophorus lingua*, *Asplenium Wrightii*, *Hymenaspplenium unilaterale*, *Leptochilus cuspidatus*, *Microlepia marginata*, *M. strigosa*, *Polypodium Wrightii*, etc.. In addition to these we can find the following undergrowth: *Bladhia crispa*, *Croomia kiusiana*, *Phajus minor*, *Cymbidium nagifolium*, *Cymbidium kanran*, *Calanthe Fauriei*, *Goodyera Ogatai*, *G. Schlechtendoliana*, *Tropidia nipponica*, *Mephitidia satsumensis*, *Tarennia zeylanica*, *Bredia hirsuta*, *Blastus cochinchinensis*, *Bladhia lentiginosa*, *Asarum yakusimensis*, *Teucrium japonicum*, *Isanthera discolor*, *Ophiorrhiza Tasiroi*, *Hydrangea grosseserata*, *Tovara filiformis*, *Polia japonica*, *Zingiber mioga*, *Alpinia satsumensis*, *Ligularia hiberniflora*, etc..

4. Zone of Lauri-Aciculisilvae.

The zone extends on the upper part of the former zone and forms laurisilvae and aciculisilvae reaching an altitude of almost 1600 m above sea level. It also develops in the lowlands, chiefly on the southwestern side of the island. But in the lower zone the vegetation shows a somewhat different appearance in construction from that in the higher zone of the island. So I distinguished the formation on the lower altitude as a different formation from the higher one and I propose to denote it as the lower part of lauri-aciculisilvae (Subformation).

I cannot exactly explain why the subformation develops on the south western side of the island but I think one of the most important causes should be attributed to the fact that by nature granite is more liable to crumble and has more chance to expose its planted surface to the light of the sun and on which sun-exposed surface there develop some sun loving conifers which are easier to be invaded than the ever-green broad leaved trees. (Pl. II. Fig. 2.) After this invasion, the ever-green broad-leaved trees begin to invade the shelter of the conifers and the formation gradually changes to laurisilvae. But before the formation attains to its climax, or before its completion, the vegetation is liable itself to be destroyed owing to landslides and other agencies above mentioned. One more cause to be added here is that since this granite holds less water than the slate, and conifers evaporate less water than broad-leaved trees, the broad-leaved tree forest finds itself under less favourable conditions for growth on granite. These and some other unknown causes would explain the lesser development of laurisilvae on this side of the island. But as in this island there is a fair rainfall in winter, in this subformation we find more ever-green broad-leaved trees than conifers and its nature is almost equal to that of the laurisilvae of the above described zone. It might have been better to include this subformation in that zone of laurisilvae were it not that it includes coniferous trees. The chief representatives of the lower part of the lauri-aciculilvae are as follows: *Pinus densiflora*, *Cryptomeria japonica*, *Abies firma*, *Pinus amamiana*, *P. Thunbergii*, *Podocarpus nagi*, *Ilex integra*, *Clerodendron yakusimensis*, *Shiia cuspidata*, *S. Sieboldi*, *Myrica rubra*, *Distylium racemosum*, *Ilex pedunculosa*, *Aucuba japonica*, *Rapanea neriifolia*, *Osmanthus ilicifolius*, *Lagerstroemia Fauriei*, *Euscaphis japonica*, *Eurya japonica*, *Syzygium buxifolium*, *Agalma lutchuense*, *Osmanthus Zentaroanus*, *Rhododendron Tashiroi*, *Bobua glauca*, *B. japonica*, *Neolitsea foliosa*, *Prunus chikusiensis*, *Acer insulare*, *Camellia japonica*, var. *macrocarpa*, *C. Sasanqua*, *Ficus Wightiana*, *Cyclobalanopsis Miyagii*, *Sakakia ochracea*, etc.. Other components of this formation such as lianes and undergrowth are the same as those of the laurisilvae so I will

omit mention of them here, but proceed to describe the other subformation that extends in the upper part of this lauri-aciculisilvae and that of the laurisilvae. (Fig. 7.)

Cryptomeria japonica is one of the chief representatives of this formation and characterizes the vegetation. The species is found on



Fig. 7.

Phot KAWATA.

The upper part of the Laurisilvae about 400 m above sea level gradually changing to Lauri-aciculisilvae

the southern side from about 300 m above sea-level, 600 m on the eastern, 800 m on the northern and 700 m on the western sides. The higher up we go, the more *Cryptomeria* we find, although it is not quite so on every side. The most conspicuous examples of the stand



Fig. 8.

of this forest are seen in the catchment of the stream Ko-yôzigawa and in the upper portion of the River Ambo near Kosugidani (Pl. III. Fig. 1.) which literally means the valley



Fig 9

Phot. KAWATA.

Cryptomeria japonica showing the "Krummholz" like structure.

where a medium sized *Cryptomeria* forest exists. On the contrary the species is quite rare in some parts of the catchments of the R. Miyanoura and the R. Tainokawa, etc.. When we reach about 1500 m above the level of the sea, we find a virgin forest of *Cryptomeria* which has become rather shrubby and looks like "Krummholz". (Fig. 8, 9.) Beside *Cryptomeria* we can observe several components of Aciculisilvae and Laurisilvae in the subformation. *Abies firma*, (Pl. IV. Fig. 2.) *Tsuga Sieboldii*, *Torreya nucifera*, *Cephalotaxus drupaceae*, and *Chamaecyparis obtusa*, (Fig. 10.) are the representatives of aciculili-



Fig. 10.

Phot. KAWATA.

Chamaecyparis obtusa in the Lauri-aciculisilvae.

gneous plants while among the broad-leaved trees we find the following aestiligneous plants: *Prunus chikusiensis*, *Acer Sieboldianum*, var. *microphyllum*, *A. insulare*, *Palura argutidens*, *Viburnum urceolatum*, form. *brevifolium*, *V. furcatum*, *Lindera Thunbergii*, *Rhamnus crenata*, var. *yakusimensis*, *Kalopanax autumnalis*, *Carpinus laxiflora*, *Rhus Toxicodendron*, var. *vulgaris*, *Clethra barbinervis*, *Tripterygium Regelii*, *Fagara ailanthoides*, *Stewartia monadelpha*, (Fig. 11.) *Sorbus japonica*, *Hydrangea paniculata*, etc.. As examples of laurigneous

plants we can find the following species: *Trochodendron aralioides*, *Ilex Hanceana*, *I. pedunculosa*, *Bobua myrtacea*, *B. Tanakae*, *Gilibertia trifida*, *Daphniphyllum macropodum*, *Neolitsea foliosa*, *Cinnamomum japonicum*, *Distylium racemosum*, *Camellia japonica*, var. *macrocarpa*, *Cyclobalanopsis acuta*, *Machilus Thunbergii*, *Actinodaphne lancifolia*,



Fig. 11.

Phot. KAWATA.

Stewartia monadelphæ in the Lauri-aciculisilvae at about 500 m
above sea level.

Ternstroemia Mokof, *Camellia sasanqua*, *Sakakia ochracea*, *Eurya japonica*, *E. yakushimensis*, *Ilex mutchagara*, *Illicium anisatum*, var. *rosea*, *Aucuba japonica*, *Rhododendron Tashiroi*, *Rhododendron yakusimanum*, etc.. (Pl. V. Fig. 3.) These laurigneous plants are more frequently seen in the lower part of the zone. The undergrowth is composed of various plants such as, *Bladhia crispa*, *B. lentiginosa*, *B. japonica*, var. *angusta*, *Skimmia japonica*, *Anamtia stolonifera*, *Athyrium Nakanoi*, (Pl. VII. Fig. 3.) *Lindsaya cultrata*, *Diplazium lanceum*, *Dryopteris gracilescens*, var. *glanduligerum*, *Diplazium Conilii*, *D. Hookerianum*, *D. Taquetii*, *Cystopteris japonica*, *Acrophorus stipellatus*, *Woodwardia virginica*, *Dryopteris gymnosora*, *D. lepigera*, *D. erythrosora*, *Hypolepis punctata*, *Histiopteris incisa*, *Polystichum amabile*, *Hymenophyllum barbatum*, *H. unilaterale*, *Trichomanes bipunctatum*, *Burmannia japonica*, *Liparis yakusimensis*, *Tricyrtis flava*, (Pl. VI. Fig. 2.) *Anoetochilus yakusimensis*, *Goodyera velutina*, *Tainia laxiflora*, etc.. As epiphytes we find: *Rhododendron Keisukei*, var. *cordifolia*, *Euonymus yakushimensis*, *Vaccinium yakushimensis*, *Elaphaglossum Yoshinagae*, *E. tosaense*, *Bulbophyllum inconspicuum*, *Cirrhopetalum japonicum*, *Bulbophyllum drymoglossum*, *Eria reptans*, *Gastrochilus matsuran*, *Goodyera pendula*, *Oberonia japonica*, *Dendrobium moniliforme*, *Sorbus japonica*, etc.. Other mosses and liverworts grow on the granite rocks, tree trunks, dead stumps and rotting logs, in a wonderful variety and give a complicated aspect to the vegetation exhibiting a type of forest which is almost virgin in nature. In recent years a part of this forest having been cut down, the natural forest was consequently destroyed. In the clearings we can see every stage of renaturalization of the forest. With regard to succession in such bare areas due to the cutting down of the forest, I should like to observe that the pioneers invading such places are of the light-loving species, the first invaders of the clearings being therophyte and broad leaved deciduous trees such as; *Mallotus japonicus*, *Acer insulare*, *Lindera citrata*, *Clethra barbinervis*, *Aleurites cordata*, *Stewartia monadelphica*, *Fagara ailanthoides*, *Kalopanax autumnalis*, *Lindera Thunbergii*, *Rubus* sp., *Callicarpa yakusimensis*, *C. mollis*,

var. *microphylla*, *Miscanthus sinensis*, *Oplismenus japonica*, *O. microphyllus*, *Isachne myosotis*, var. *minor*, *Gnaphalium japonicum*, *G. multi-ceps*, *Carpesium rosulatum*, *Eupatorium Reevesii*, *Desmodium racemosum*, *Plagiogyria japonica*, *Histiopteris incisa*, *Cyclophorus lingua*, etc.. Among these light-loving plants grow *Cryptomeria japonica*, *Abies firma*, *Tsuga Sieboldii*, etc.. These less light-loving trees begin to germinate and find shelter from the strong sunlight under these first invaders and when these second invaders have developed, the following plants begin to invade: *Trochodendron aralioides*, *Bobua myrsinea*, *B. japonica*, *B. Tanakae*, *Gilibertia trifida*, *Elaeocarpus japonicus*, the seedlings of which have less resistance against the sunlight than the other seedlings which developed in the earlier stages of the forest succession. In the higher part of this zone coniferous trees like *Cryptomeria japonica* (Pl. IV. Fig. 1.) and *Tsuga Sieboldii* are so predominant that it may be reasonable to distinguish this region as the belt of aciculisilvae, but from my present investigation I cannot decide at which altitude a demarcation line should be drawn. So I shall include the belt of coniferous trees in that of lauri-aciculisilvae.

I wish to draw attention to the fact that the aestisilvae is quite poor in this island while it is found in Kyûsyû, for example, on Mt. Takakuma, situated in Prov. Ôsumi in the southern part of Kyûsyû. The aestisilvae which develops is represented by a *Fagus crenata* sociation which extends from about 900 m above sea level where the laurisilvae gradually disappears. In the island the aestisilvae is deficient in the upper part of the laurisilvae which is directly succeeded by aciculisilvae. This kind of forest zonation in the island is quite the same as that found in the mountains of Formosa and some other tropical regions. From this point of view the vegetation of Yakusima has the character of the forest zonation of some tropical and subtropical lands.

Wet Ground Society.

Along river banks, or on depressions a special wet ground plant society develops. This society is scattered in the lauri-aciculisilvae of this island, especially at high altitudes. In this society the develop-

ment of *Spagnum* is not very vigorous while the following species are predominant: *Drosera rotundifolia*, *Parnassia palustris*, f. *minima*, *Utricularia yakusimensis*, *Metanartecium luteoviride*, *Pogonia minor*, *Platanthera nipponica*, *Ranunculus yakushimensis*, *Saxifraga cortusae-folia*, var. *obtusocuneata*, *Astilbe glaberrima*, etc., and among the ligneous plants, *Ilex mutchagara*, *Wikstroemia yakushimensis*, and *W. Kudoii* etc., and mosses. It is an interesting fact that most of the plants which are found in this society are endemic to the island.

5. Zone of the *Pseudosasa Owatarii* Association.

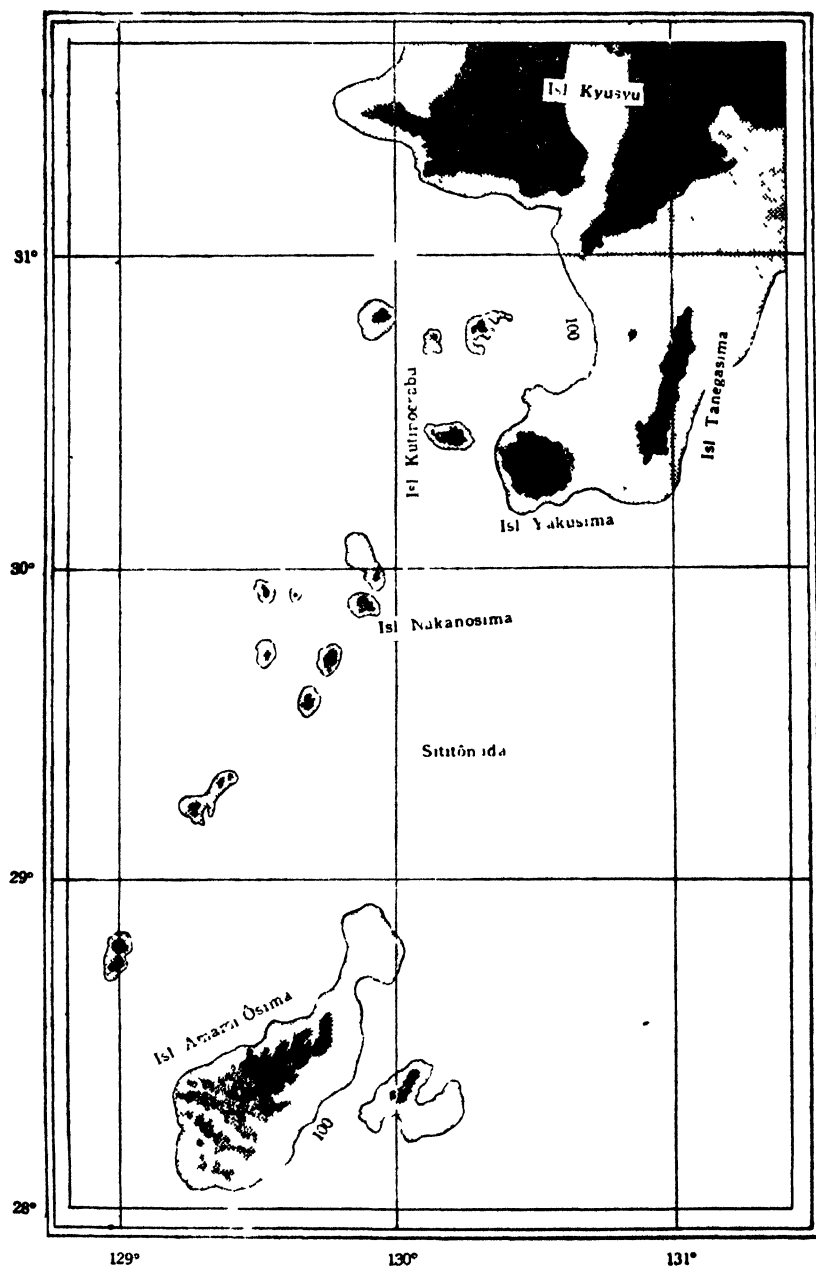
This zone is found in the high altitudes of the island and occurs on the peaks and ridges rising above the timber line. The zone is chiefly composed of the *Pseudosasa Owatarii* Association which predominates and occupies the area about 1800 m above the level of the sea until it looks like a green 'mat. (Fig. 12.) In this association besides this *Pseudosasa Owatarii* we can find



Fig. 12.

The zone of the *Pseudosasa Owatarii* Association at Miyanouradake.

Fig. 13.



several accessory members such as *Rhododendron yakusimanum*, *Pieris japonica*, *Pedicularis gloriosa*, var. *Ochiaiana*, *Viola biflora*, *Hypericum yakusimense* (Pl. VII. Fig. 2.) *Geranium Yoshiiianum*, *Anthoxanthum odoratum*, *Wikstroemia Kudoi*, *Lysimachia minina*, *Melampyrum laxum*, *Anaphalis yakusimensis*, (Pl. VII. Fig. 1.) *Cirsium yakumontanum*, *Gentiana yakumontana*, *Crawfurdia japonica*, var. *tenuis*, *Lycopodium sitchense*, var. *nikoense*, *L. chinensis*, *Carex* sp., *Juniperus tsukusiensis*, etc.. The association is broken by patches of wet ground scattered here and there in this zone near small streams or springs on which ground a special plant association develops. The association is composed of the following plants: *Drosera rotundifolia*, *Solidago virgaurea*, var. *minutissima*, *Pogonia minor*, *Utricularia yakusimensis*, *Ranunculus yakushimensis*, *Metanltesium luteoviride*, *Shortia soldanelloides*, var. *minima*, *Juncus prismatocarpus*, var. *viviparus*, *Lycopodium chinense*, var. *Somai*, *Astilbe glaberrima*, *Calamagrostis hakonensis*, *C. Masamunei*, *Wikstroemia Kudoi*, etc.. This type of association extends not only in this zone but also in the upper part of the lauri-aciculisilvae, and a well-developed association of this kind is found at the place called "Hananoego" because of its beautiful scenery, where these two zones meet. As opposed to this wet association, we find a very desiccated association developing on the granite blocks scattered here and there in this zone. The typical representatives of the association are lithophytes such as *Kudoa yakushimensis*, *Aleurites platipetala*, *Abelia serrata*, *Rhododendron Keiskei*, var. *cordifolia*, *Menziesia purpurea*, *Deschampsia flexuosa*, *Potentilla Dickensii*, *Juniperus tsukusiensis*. The *Pseudosasa Owatarii* (Pl. V. Fig. 2.) Association and the marshy association (Pl. VI. Fig. 1.) seem to be reciprocally interchangeable according to the quantity of water in the ground where the associations develop.

II. Life Form.

Life-form is an index of the habitat where plants live: that is, when we steadily observe the life-form of plants in a given vegetation we can deduce the habitat of the vegetation and at the same

time we can learn to what phytogeographical position the locus of the vegetation belongs from the standpoint of oecological plant geography. In view of the above consideration, I have examined the life-form of plants in three localities in the island, namely in the lowlands near Ambo, in Kosugidani about 600 m above the level of the sea where *Cryptomeria japonica* predominates and in the Pseudosasa Owatarii Association in the higher regions, using the widely-used life form system of RAUNKIAER for the sake of convenience. As a result of my investigations I obtained the following biological spectra of the three localities.

Biological Spectra

| Localities | Number of species | Percentage number distributed among the species | | | | | | | | | |
|---------------------------------|-------------------|---|----|----|----|----|-----|----|----|----|-----|
| | | S. | E. | M. | M. | N. | Ch. | H. | G. | H. | Th. |
| Lowland | 299 | 0 | 9 | 3 | 20 | 15 | 11 | 12 | 5 | 1 | 24 |
| Kosugidani | 145 | 0 | 8 | 10 | 21 | 17 | 10 | 21 | 8 | 0 | 5 |
| Pseudosasa Owatarii Association | 94 | 0 | 1 | 0 | 14 | 19 | 4 | 49 | 7 | 0 | 5 |
| Normal spectrum | 400 | 1 | 3 | 6 | 17 | 20 | 9 | 27 | 3 | 1 | 13 |

The above table shows that in the lowland (near Ambô) epiphyte and therophyte predominate and that in Kosugidani, about 600 m-700 m above the sea level, therophyte recedes and epiphyte and geophyte predominate, while in the Pseudosasa Owatarii Association instead of epiphyte, hemicriptophyte and geophyte predominate. The fact of the dominance of therophyte in the lowlands, and of hemicriptophyte in the high region indicates that the vegetation of the island expresses in its life-form a somewhat arctic nature in the higher and a subtropical one in the lower regions.

THE PHYTOGEOGRAPHICAL POSITION OF THE ISLAND.

Dr. DRUDE in his "Die Florenreiche der Erde (1884)," included the island in "Kusterländer der Chinischen und Japanischen Seen"

and also in his "Pflanzengeographie p. 424 (1890)," he included the island in "Ostasiatische Ländergruppe" in which region he recognized several minor groups including the island in one of the subdivisions "B. Inseln zwischen 30°-50° N". The island is situated in the most southern part of this subdivision and is treated together with the southern extremity of Kyûsyû and is stated to possess some characteristics of tropical regions even though they be weak. This suggestion of Dr. DRUDE concerning the phytogeographical position of our island is confirmed by my present investigation.

Dr. SCHIMPER* has treated southern Japan as "Der Temperirte Regenwald" and the island seems to be included in this region.

In "Pflanzengesellschaften der Erde (1930)" Dr. RÜBEL included the vegetation of the island in the Formation Class of Pluviilignosa (Regengehölze) together with that of the southern extremity of Kyûsyû and Ryûkyû and the lowlands of Formosa. But here we have to note that the climate of the island does not exactly agree with the definition given by him; i. e. while the rainfall in the island coincides with the definition, the temperature does not wholly confirm it. As I showed in another place in this work, the temperatures taken at Nagata lighthouse and at Ambô are as follows.

Nagata

| | | | |
|--------|------------|--------|-------------|
| Winter | { Dec. 14° | Summer | { July 28° |
| | { Jan. 11° | | { Aug. 28° |
| | { Feb. 12° | | { Sept. 27° |

Ambo

| | | | |
|--------|------------|--------|-------------|
| Winter | { Dec. 17° | Summer | { July 28° |
| | { Jan. 16° | | { Aug. 29° |
| | { Feb. 16° | | { Sept. 28° |

The differences in temperature between the warmest month and the coldest is superior to 6°C and the coldest temperature is below 18°. On the other hand the representatives of Pluviilignosa are few. But the richness in epiphyte and lianes indicates that the vegetation shows the nature of Pluviisilvae in the lower part of

* A. F. W. SCHIMPER; Pflanzen-Geographie 1898.

the island, though on the whole the vegetation exhibits the nature of Laurisilvae. So in this sense I propose to include the island and the southern part of Kyûsyû in the region of Laurilignosa at the southern extremity of which the island is, of course, situated. The limit of the distribution of Pluvilignosa will be found in Amami-Ôsima or in some more southern land in the Ryûkyû Archipelago.

Dr. ENGLER and Dr. GILG wrote in the chapter "Die Florenreich und Florengebiete der Erde" in "Syllabus der Pflanzenfamilien" (1924) that in the Japanese Empire the lands further north than Kyûsyû belong to the "Temperiertes Ostasien" and those further south than Okinawa belong to "Monsungebiet"; and that the regions where *Fagus Sieboldii* and *Pinus cembra* occur are included in "Temperiertes Ostasien" but he did not specifically mention the phytogeographical position of the island. In the island we can not find these two species, but I believe the island should be included in "Temperiertes Ostasien," because in it I was able to find 941 elements (species, varieties, and forms indigenous to the island) which are also found in Tanegasima and lands further north of it, and 803 elements which are also found in Amami-Ôsima and lands further south of it. From these phytogeographic investigation of the island I reached the conclusion that the Flora of the island of Yakusima belongs to the same region as that of Kyûsyû, Sikoku, and of the southern part of Honsyû, even though it is more or less intimately related to the Flora of Amami-Ôsima, Okinawa and Formosa.

PLATE I.

Explanation of Plate I.

Anaphalis yakusimensis, MASAMUNE.

- Fig. 1. The plant.
2. An inner bract.
 3. An outer-most bract, front view.
 4. The same, back view.
 5. A perfect, sterile flower.
 6. A female, fertile flower.
 7. Apical portion of the style of a perfect flower.
 8. Apical portion of the style of a female flower.
 9. A bristle of the pappus of a perfect flower.

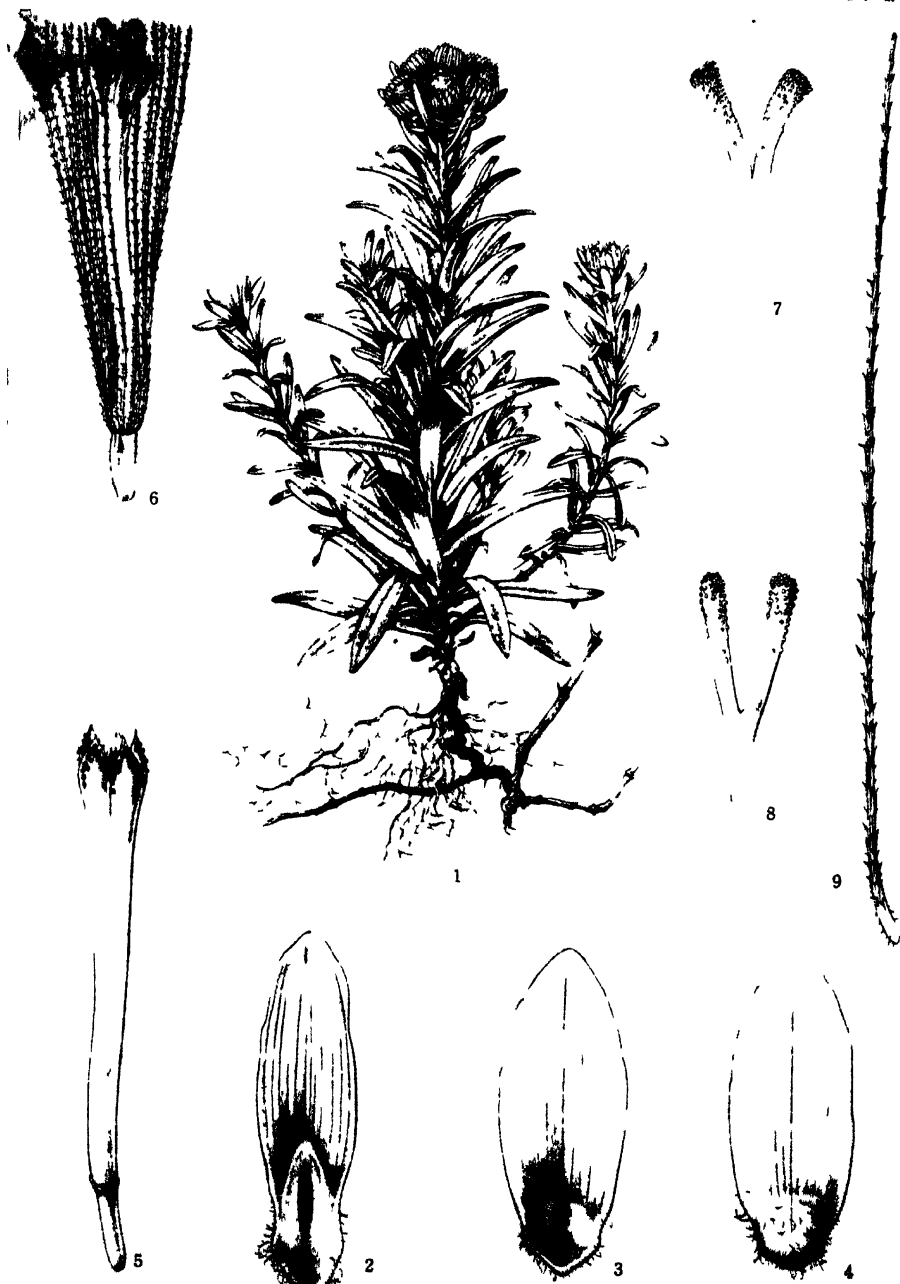


PLATE II.

Explanation of Plate II.

- Fig. 1.** *Ligularia hiberniflora*, growing as undergrowth in the laurisilvae.
- Fig. 2.** The lauri-aciculisilvae in the southern part of the island; showing the crumbly nature of the granite.

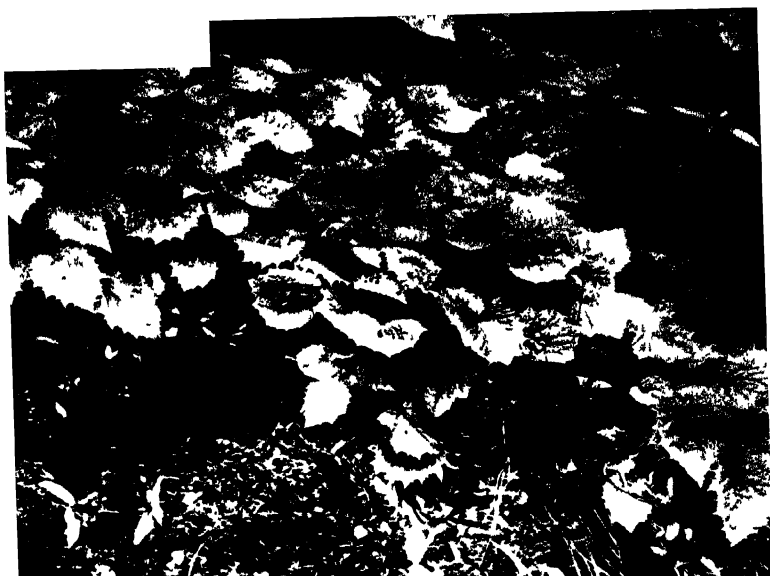


Fig. 1.

Phot. KAWATA

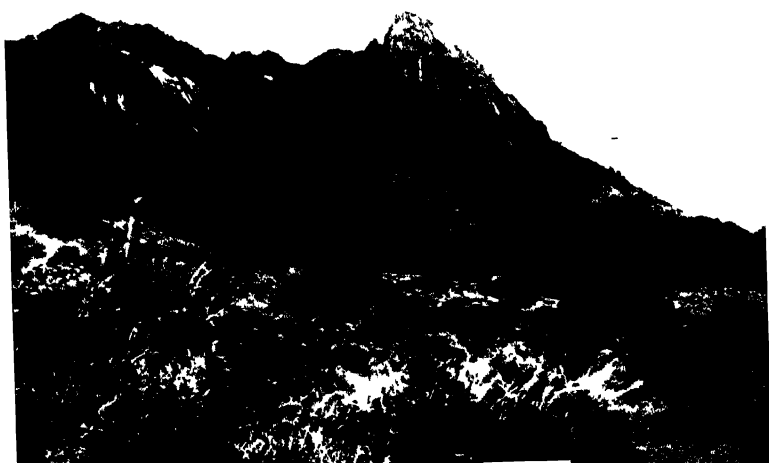


Fig. 2.

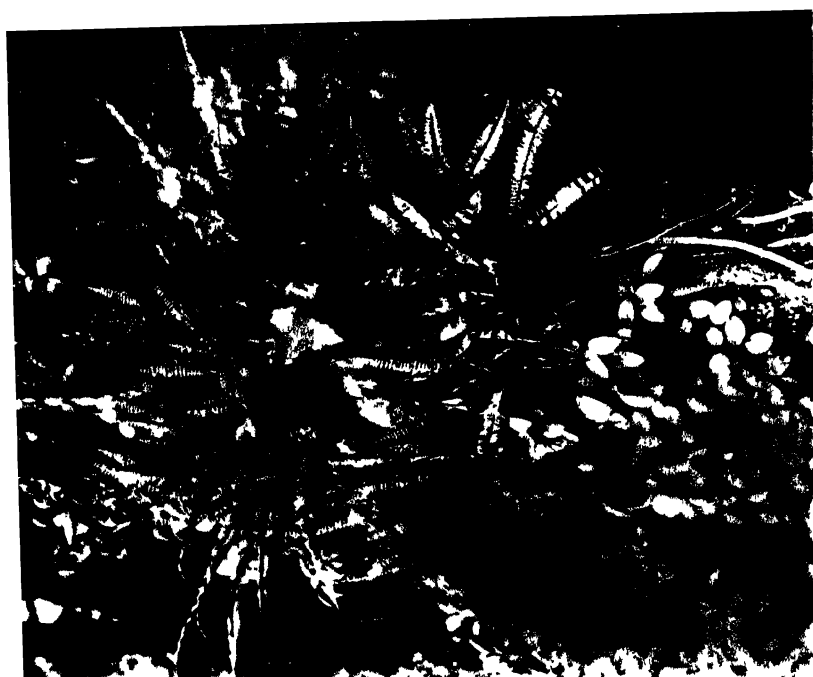
Phot. KAWATA

PLATE III.

Explanation of Plate III.

Fig. 1. Forest, mainly of *Cryptomeria*, in the catchment area of the River Ambo.

Fig. 2. *Neottopteris Nidus* in the laurisilvae.



Phot. KAWATA

Fig. 2.



Phot. KAWATA

Fig. 1.

PLATE IV.

Explanation of Plate IV.

- Fig. 1.** Forest, mainly of *Cryptomeria japonica* about 1700 m above sea level.
- Fig. 2.** Forest in the lauri-aciculisilvae in which *Abies firma* predominates.



Fig. 1.

Phot. KAWATA



Fig. 2.

Phot. KAWATA

PLATE V.

Explanation of Plate V.

- Fig. 1.** *Cirsium yakumontanum* in the lauri-aciculisilvae, about 1100 m above sea level.
- Fig. 2.** *Pseudosasa Owatarii* Association at about 1900 m.
- Fig. 3.** A typical forest in the lauri-aciculisilvae near Kosugidani.



Fig. 1.



Fig. 2



Fig. 3. *Phot. KAWATA*

PLATE VI.

Explanation of Plate VI.

- Fig. 1.** *Lycopodium selago*, var. *Somai* in the wet ground in the Pseudosasa Owatarii Association.
- Fig. 2.** *Tricyrtis flava* in the lauri-aciculisilvae near Kosugidani, about 700 m above sea level.
- Fig. 3.** *Piper futokadsura* in the submountain zone.



Fig. 1.



Fig. 2.



Fig. 3.

Phot. KAWATA

PLATE VII.

Explanation of Plate VII.

- Fig. 1.** *Anaphalis yakusimensis* in the Pseudosasa Owatarii Association about 1800 m above sea level.
- Fig. 2.** *Hypericum yakusimense* in the Pseudosasa Owatarii Association.
- Fig. 3.** *Athyrium Nakanoi*, growing as undergrowth in the lauri-aciculisilvae.
- Fig. 4.** Stump of a *Cryptomeria japonica* in the Cryptomeria forest near Kosugidani, about 800 m above sea level : almost 5 metres in diameter.

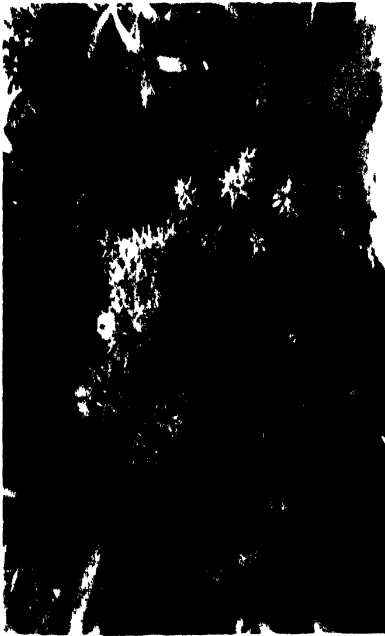


Fig 1



Fig 2.

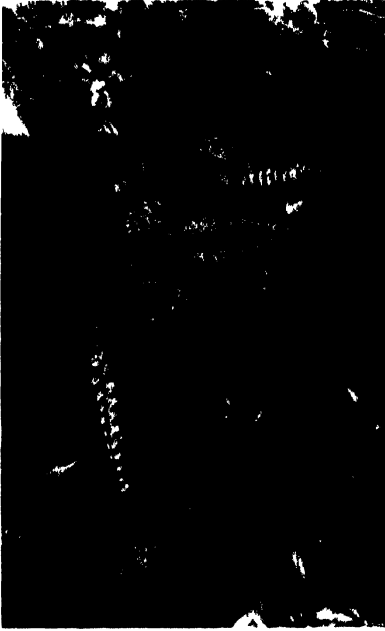


Fig 3



Fig 4

**ENUMERATION OF ALL THE VASCULAR PLANTS,
Hitherto Known from the Island of Yakusima with Their
Geographical Distributions**

PTERIDOPHYTA

Danaceae

Danaceae, AGARDH, Aphorismi Bot. p. 117 (1822 ; LINDL., Nat. Syst. Bot. p. 402 (1836), et Veg. Kingd. ed. 3. p. 82 1853 ; NAK., in Tokyo Bot. Mag. XLI. p. 74 (1927)

Syn. **Marattiaceae**, KAULEUSS, Enum. Fil. p. 31 (1824) ; ENDL., Gen. Pl. p. 63 (1836) ; BITT. in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 422 (1900)

Mesodmeae, BL., Enum. Pl. Jav. II. p. 260 (1830)

Angiopteris, HOFFM., Comm. Soc. Reg. Getting.

XII. p. 29 (1796 ; SWARTZ, in Schrader Journ. Bot. I. pt. II. p. 107 (1801), et Syn. Fil. pp. 7 et 166 (1806 ; WILLD., Sp. Pl. V. pp. 36 et 69 (1810) ; CHRIST, Farnk. Erd. p. 357 (1897) ; BITTER, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 436 1900 ; CHR., Ind. Fil. p. 59 1906)

Syn. **Psiloclochea**, PRESL., Supp. Tent. Pterid. p. 28 (1845)

Angiopteris suboppositifolia, DE VRIESE, Monogr. p. 23 (1853 p.p. ; NAK., in Tokyo Bot. Mag. XLI. p. 76 (1927), et in Bull. Biogeog. Soc. Jap. I. p. 250 (1930) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 21 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1 (1931)

Syn. **Angiopteris evecta**, (non HOFFM.) KUNZE, in Bot. Zeit. VI. p. 492 (1848) ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 182 (1867) ; FR. et SAV., Enum. Pl. Jap. II. p. 252 1876 ; LUERSS, in Engl. Bot. Jahrb. IV. p. 366 (1883) ; HENRY, List Pl. Formos. p. 117 (1896 ; CHRIST, in WARB., Mons. p. 94 (1900) p.p. ; MATSUM., Ind. Pl. Jap. I. p. 286 (1904) p.p. ; MATSUM. et HAY., Enum. Pl. Formos. p. 558 (1906) p.p. ; MERR., Enum. Hainan Pl. p. 20 (1927)

Angiopteris crassipes, (non WALL. COPEL., in Philipp. Journ. Sci. IV. p. 9 (1909) ; MAK. et NEM., Fl. Jap. ed. 1. p. 1563 (1925)

Nom. Jap. **Ryûbintai**

Leg. Ipse, Aug. 7, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Bonins, Taiwan, Philippines, China.

Note. It grows as undergrowth in the woods from the sea level up to about 600 m. The species is distributed in subtropical and tropical regions of Eastern Asia.

Ophioderma, BLUME, apud Endl., Gen. Pl. p. 66, no. 672 (1836); NAK., in Tokyo Bot. Mag. XL. p. 371 1926

Syn. *Ophioglossum*, LINN., Sp. Pl. ed. 1. p. 1062 1753) p.p.

Ophioglossum, Sect. *Ophioderma*, BL., Enum. Pl. Jav. II. p. 259 1830

Cheiroglossa, PRESL, Suppl. Tent. Pterid. p. 56 1843)

Ophioderma pendulum, PRESL, Suppl. Tent. Pterid. p. 56 1843 ; NAK., in Tokyo Bot. Mag. XL. p. 372 (1926), et in Bull. Biogeogr. Soc. Jap. I. p. 250 1930 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 21 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 4 (1931)

Syn. *Ophioglossum pendulum*, LINN., Sp. Pl. ed. 2. p. 1518 1763 ; HENRY, List Pl. Formos. p. 117 1896 ; CHRIST, Farnk. Erd. p. 364 1897 ; CHRIST, in Bull. Herb. Boiss. VI. p. 973 1898 ; CHRIST., in WARB. Mons. I. p. 91 1900 ; BITTER, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 469 f. 263 1900 ; MATSUM., Ind. Pl. Jap. I. p. 330 1904 ; MATSUM. et HAY., Enum. Pl. Formos. p. 557 (1906 ; COPEL, in Philip. Journ. Sc. IV. p. 5 1909 ; MATH., in Journ. Linn. Soc. XXXIX. p. 375 1911 ; A. ROSENB., Malay. Fern. Allies, Supp. I. p. 454 1917 ; MAK. et NEM., Fl. Jap. ed. 1. p. 1562 1925

Ophioglossum reticulatum, HOOK. et BAK., Syn. Fil p. 446 1868

Nom. Jap. *Koburan*

Leg. Ipse, ca. Ambô, Jul. 20, 1927.

Distr. Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Hawaii, India.

Note. This is one of the representatives which have their northern limit of habitat in this island.

| Names of Plants | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|---------|--------|------------|--------------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami Ôsima | Ryûkyûs | Kyûsyû | Tanegasima | Kyûsyû Prop. | Sikoku |
| | | | | | | | | | | Honsyû |
| | | | | | | | | | | Korea |
| | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | Saghalien |
| | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | China |
| <i>Ophioglossum vulgatum</i> , LINN. | + | + | | | | | + | + | + | + |
| <i>Ophioderma pendulum</i> , PRESL | + | + | + | + | + | | | | | + |

In respect of this family, the flora of the island has a closer relation to that of the southern regions than to that of the northern ones, because the island has a genus, *Ophioderma* which is not found in lands further north than Yakusima. From this point of view the phytogeographical position of the island has the same

The volume of such caps, however, is affected by other factors than volume of the whole cytoplasm—factors such as surface tension of the vacuole, and vacuolar contraction. The result is therefore indecisive.

More satisfactory determinations of volume were made on the cortical cells of apple twigs. These cells possess very bulky protoplasm, occupying about half the cross-sectional area of each cell. They contain no starch in the hardened state, but an abundance of it when in the naturally unhardened condition. Artificial dehardening of branches taken into the laboratory, however, is accomplished before any starch appears, and it was during a two-week dehardening period of this kind that the measurements were made. The average of four branches shows a practically constant volume of protoplasm during this period of dehardening (table III). Since osmotic pressure fell during the same time from 25.5 to 19 atm.—about 25 per cent. reduction—the pressure in the protoplasm must have fallen *pari passu*, indicating, if due to colloidal change, a slight decrease of hydrophily, or conversely a *slight increase of hydrophily (though not of hydration) with hardening*. On the other hand, the change may be purely osmotic.

TABLE III

TWIGS TAKEN INDOORS FEBRUARY 11, 1935. EACH VALUE IS THE AVERAGE OF 10 CELLS.
AREAS OBTAINED FROM PLANIMETER MEASUREMENTS OF CAMERA-LUCIDA DRAWINGS

| TIME IN LABORATORY | PERCENTAGE OF CELL AREA OCCUPIED BY PROTOPLASM | | | | |
|-----------------------|--|---------|------------|--------------------|---------|
| | ALEXANDER | WEALTHY | WOLF RIVER | PATTEN GREENING | AVERAGE |
| <i>days</i> | % | % | % | % | % |
| 0 | 47.7 | 45.2 | 53.1 | 47.7 | 48.4 |
| 1 | 46.3 | 42.2 | 53.0 | 57.4 | 49.7 |
| 3 | 50.5 | 46.3 | 49.5 | 51.7 | 49.5 |
| 7 | 52.6 | 51.1 | 54.4 | 49.6 | 51.6 |
| 14 | 46.7 | 41.3 | 50.8 | 57.6 | 49.1 |

Still another comparison was made, using the cortical cells of *Catalpa*. In this case the proportion of protoplasm was found to decrease definitely on dehardening, but the beginnings of growth introduced a complicating factor (fig. 2).

While these results seem to preclude any very great or general increase in protoplasmic volume with hardening, such as the theory of protoplasmic resistance to dehydration would demand, they do not reveal how much of the increase of osmotic value which does occur is due to colloidal change. The next method gives more definite results on this problem.

(2) *Non-solvent space and bound water in the protoplasm.*—It has already been shown that the non-solvent space in hardened cortex cells is

larger than in unhardened cells, and that most of the increase occurs in the vacuole. The protoplasm also possesses a large proportion of non-solvent space—about 50 per cent. of its volume when in equilibrium with a molar dextrose solution, both in hardened and dehardened cells. This is about the same proportion as in the vacuole of dehardened cells, but only two-thirds of that in the vacuole of hardened cells.

Since in the results with *Catalpa*, as shown in figure 2, the volume, both of the protoplasm as a whole and of its non-solvent fraction, is greater in the hardened cells, it follows that the protoplasmic colloids are more hydrophilic.

But even the absence of an increase in the volume of the protoplasm with hardening would not preclude a possible increase of hydration or hydrophilic quality, because of the complication that the dry weight of the protoplasm may diminish. In absence of photosynthesis, there must be a reserve of insoluble material in the cell, which, during the hardening process, is transformed into osmotically active substance and, since simultaneously with the osmotic increase the non-solvent space in the vacuole increases greatly while in the protoplasm it shows an increase only when calculated in relation to the normal cell volume, the diminution of solids is more likely to be in the latter. Commonly, starch is the visible substrate, and that of course is stored in the plastids; but in the starch-free cells, on which our experiments were mostly made, some intermediate reserve carbohydrate or fat may be present in a state of dispersion in the cytoplasm also.

If indeed the protoplasm loses solids to the vacuole, and since its own non-solvent space is undiminished or even increased, the bound water element in it must be augmented. In other words, its colloids become more hydrophilic.

On the same condition, since the volume of the whole protoplasm remains the same, its total water content must be higher.

These volume studies are beset with difficulties and cannot be regarded as more than preliminary, but at any rate on the whole they support the theory of an increase in hydrophilicity of the protoplasm with hardening.

(b) STABILITY.—This property is closely related to the previous one, since the resistance of the protoplasm, or any other colloidal system, to precipitation or salting out, depends largely on the hydrophilicity of its least stable elements. But an increase in the hydrophilic property of a portion of the solid phase of the protoplasm would not be reflected in a proportional increase in that of the protoplasm as a whole; so that a great increase in protoplasmic stability may attend only a slight increase in its attraction for water, as estimated by the methods described in the previous section. Also, there are probably factors other than hydrophilicity concerned in such a complex phenomenon as coagulation of protoplasm.

As a possible clue to the relative stability of protoplasm in the hardened and unhardened state, respectively, we may compare its resistance to other coagulation agents than frost. The action of acid and of heat was tried. Hardened and unhardened cabbage plants were exposed together to vapor of a 7.5 per cent. and also of a 10 per cent. solution of acetic acid for 5 hours. All of the plants suffered, but parts of them remained alive. Hardened and unhardened suffered alike.

The heat test was made by dipping leaves into water at 60° C. long enough to produce partial killing. Again the result was the same in hardened and unhardened plants. *There is no indication here, therefore, of protoplasm becoming less sensitive to coagulating agents in general as a result of hardening.*

HARVEY, who is the author of the theory of greater protein stability, bases his hypothesis on tests with expressed juice. He found (17) that when the juice of hardened and unhardened cabbage leaves was frozen and centrifuged, chemical analysis revealed that the precipitation of proteins was greater in the latter. MUDRA (34) obtained the same result with other plants. HARVEY also found a greater percentage of soluble amino acids in hardened juice, though NEWTON *et al.* (39) regard this as an effect of freezing rather than of hardening.

Testing cabbage juice in relation to the H-ion effect, we obtain the contrary result as regards stability. To a series of tubes each containing 10 cc. of tissue extract, various concentrations of 0.1 N HCl were added. The region of complete precipitation was from pH 3.9 to pH 4.4 in the case of both hardened and unhardened plants. On either side of this zone is a region of incomplete precipitation, the limits of which are pH 5.2 and pH 3.9 in the unhardened, whereas in the hardened plants they extend to pH 5.4 and pH 3.5. Beyond this zone there is little or no precipitation on either acid or alkaline side. *The wider pH zone of precipitation in the juice of hardened plants would point to a poorer stability of their colloids.* This experiment goes to offset results from which a more hydrophilic quality of the juice colloids has been inferred. But of course juice is not protoplasm!

Changes in the colloidal stability of a hydrophilic sol are often paralleled by changes in viscosity, since viscosity is directly and profoundly influenced by the hydration of the internal phase. But the so-called viscosity of protoplasm, as it is measured, is rarely true viscosity, and is influenced by aggregation as well as hydration of particles. Viscosity tests and their significance are reserved for a later section of this paper.

Certain facts are at variance with any theory of injury through dehydration; for example, the experience that drought-resistant plants are not always frost-resistant, and the finding of ILJIN that cells of plants which are sensitive both to light frost and to wilting may survive extreme and pro-

longed desiccation, when this is produced by plasmolysis alone or plasmolysis followed by drying. These phenomena point to mechanical factors as the immediate cause of death, both in freezing and wilting, though not exactly the same in the two cases. Moreover, the most conspicuous of the changes so far described—those producing reduction in ice formation—are as applicable to a theory of mechanical as to one of dehydration injury.

III. Resistance to mechanical effects of freezing and thawing

Theories of mechanical injury may be subdivided into two sets: one which ascribes the effect to pressure of ice crystals, and the other to stress set up by displacement of water. In the former case the fatal period will be that of freezing; in the latter it may be either freezing or thawing. An advantage in the study of mechanical as compared with physico-chemical action is that it can be followed microscopically.

INJURY THROUGH PRESSURE OF ICE

The view that frost injury is mechanical dates far back. DUHAMEL and BUFFON (11) postulated that ice forming inside a cell ruptured the wall by expansion. From direct observation, however, it was proved by GÖPPERT (12) that the walls are not ruptured, and by SACHS (43), MOLISCH (33) and others that normally ice forms in the intercellular spaces. Later it was shown that with rapid freezing intracellular development of ice does occur (MÜLLER-THURGAU, 35; MOLISCH, 33). This condition is generally fatal to plant cells (ÅKERMAN, 1; CHAMBERS and HALE, 3), whereas some animal tissues are said to be less injured by quick than by slow freezing, because the smaller crystals produce less destruction of the tissue. In plant cells, if the vacuole freezes, the compression of the protoplasm between it and the wall, especially if there is a hull of ice outside (ILJIN, 19), is probably sufficient to cause death, even if the protoplasm itself resists freezing. But opinions differ as to the exertion of mechanical pressure by ordinary intercellular ice. MAXIMOV is a leading upholder of the theory that pressure of the ice crystals on the cells induces coagulation of the protoplasm, and he couples with it the suggestion that mere contact of the ice phase with the plasma membrane may be fatal. On the other hand, SCHANDER and SCHAFFNIT (45), followed by ILJIN, argue that the ice crystals grow into the intercellular spaces and neither press upon the cells nor even touch the protoplasm. ILJIN points out that copious intercellular space in a plant is no protection against frost. Yet it has long been known that cells and tissues may be torn apart by the growth of relatively large ice masses (PFEFFER, 41), and WIEGAND's observations of frozen buds and twigs indicate that less obvious pressure is exerted by crystals of smaller and more ordinary dimensions. There is lack of proof, however, that this is a general cause of injury.

The phenomenon with MAXIMOV first quoted in support of the theory, *viz.*, the protective action of external solutions (which reduced the amount of ice), was shown by ÅKERMAN (1) and ILJIN (19) to depend mainly on plasmolyzing action, and thus pointed the way to an alternative type of mechanical theory.

INJURY THROUGH STRESS SET UP BY DISPLACEMENT OF WATER

WIEGAND (47) and others observed that when tissues freeze in the ordinary way the cells shrink, wall and all, as water is withdrawn. HOLLE (18) noted the same thing in wilting. This behavior is made possible by liquid cohesion within the cell, and adhesion of protoplasm to wall, there being no external liquid to cause plasmolysis. In proportion to the rigidity of the wall, stresses are set up in the cell by its loss of water, and ILJIN observed that in drying cells the protoplasm might be ruptured within itself or torn from the wall—with fatal effect. This he at first regarded as the regular cause of injury, whether in frost or drought, because, when the protoplast was released from the wall by true plasmolysis, the cells could endure severe desiccation and freezing. Later experiments (20) led to a modification of his view, with regard to frost injury at least. He found that application of solutions *after* freezing was also an effective protection, and therefore he assigned injury to the period of thawing. What happens in thawing, according to his observations, is that the walls first absorb water and lift away from the protoplast (pseudoplasmolysis), after which deplasmolysis tends to ensue. He avers that, on account of its high viscosity in the dehydrated state, the protoplast ruptures if deplasmolysis is rapid. Accordingly he argues that the protective function of the solutions bathing the cell is to slow down deplasmolysis. Whether ILJIN's theory is correct in detail or not, it draws attention to a type of stress to which cells are exposed, and leads us to inquire what kind of changes would enable the cells to avoid mechanical injury under these circumstances.

HARDENING CHANGES IN RELATION TO MECHANICAL INJURY

As already mentioned, some of the changes discussed under dehydration injury are just as applicable here. Part of the osmotic increase is almost always due to lowering of moisture content which, while it reduces the amount of ice and of mechanical injury, is itself a stage in dehydration and not a protection against this result. (*Cf.*, however, its possible rôle in supercooling, as described previously.) The binding of water, while actually a disadvantage as regards undue concentration of the sap, may be very useful against mechanical injury.

The supposed protective action of sugars has also been invoked by MAXIMOV in the case of protoplasmic coagulation from mechanical causes.

But there are certain other properties of the protoplasm which must play a part in resistance to mechanical injury such as we have described, and which have been neglected almost entirely in studies of the mechanism of frost resistance. Such are (a) the permeability and (b) the viscosity of the protoplasm.

(a) PERMEABILITY.—In a previous report (LEVITT and SCARTH, 26) we have demonstrated that the permeability of cells for polar compounds increases remarkably with hardening and that it undergoes a greater change and is better correlated with hardness than any other character, even osmotic pressure. Towards apolar non-electrolytes, such as urethane and succinimide, there is no measurable change. Towards polar non-electrolytes, such as urea, thiourea, and glycol, which have relatively small molecules, there is a general relation between permeability and hardening, but the seasonal changes do not always run parallel. Towards an electrolyte (KNO_3) the variation is still greater and the correlation with hardness much closer. Data regarding water permeability are insufficient to allow of an equally general statement, but as far as they go they show the same trend as with other polar compounds. Cabbage cells are about twice as permeable to water when hardened as when not, and those of woody plants show a greater difference. On the membrane theory of permeability we draw the general inference that there is a widening of the aqueous pores of one or both the protoplasmic membranes of the cell.

Our results show that the correlation between permeability and hardness exists in various types of plants and shows no exceptions. Also the relation is independent of the nature of the cause which induced the hardening. Low temperature, drought, checking of growth, all increase permeability as well as hardness.

To some extent the relation seems to hold even in the vegetative, unhardened phase of life. Thus, highly cold resistant cells, such as those of bacteria, mosses, and cortex of woody plants, are at all times and seasons unusually permeable to KNO_3 and perhaps to water.

In view of this widespread association of the two conditions and of the fact that a permeability change does not necessarily attend an osmotic change and is therefore not simply incidental to the latter, it seems likely that there is a direct causal connection between permeability and hardness. This will be discussed later.

(b) VISCOSITY OF PROTOPLASM.—If, as ILJIN finds, injury may occur through tearing of the protoplast in a phase of thawing out, we might expect to find protection through an increase of plasticity or reduction of viscosity in hardened cells. A comparison of the viscosity of protoplasm in the hardened and unhardened state has been made by KESSLER (22), who arrived at the conclusion that viscosity increased, not decreased, in hardening. He

tested the cells of various plants in summer and winter by the centrifuge as well as by the plasmolytic method. The centrifuge method in this case is handicapped by the fact that starch is present in the unhardened and absent in the hardened condition of plants. From subsidiary experiments with darkened plants, KESSLER reached the astonishing conclusion that the specific gravity of starch-free plastids is higher than of those with starch—in spite of the fact that starch is much denser than protoplasm in general, while chloroplasts are believed to be rather lipoidal in composition, and were actually found by himself to have a tendency to move *centripetally* in some hardened tissue. If KESSLER's premise as to specific gravity is at fault, his result that chloroplasts in unhardened plants are more easily thrown down than in hardened is no proof of lower viscosity.

The "plasmolysis time" test was applicable only to *Sempervivum* among the plants tested by KESSLER, where it gave a comparable result. Slower rounding up in the hardened cells pointed to a greater viscosity—or rather a stronger adhesion to the cell wall—in the hardened state. The other genera used, *Hedera* and *Saxifraga*, did not allow comparison, because the protoplast rounded up immediately on plasmolysis.

In our own work on cold resistance, the attempt was first made to distinguish a viscosity difference by observing Brownian movement. However, neither streaming nor any appreciable Brownian movement could be detected in hardened *Catalpa* cells. Nevertheless, the plastids and protoplasm seemed to be clumped together at the periphery and mostly the ends of the cells, perhaps indicating a low viscosity which would allow free play to surface tension. In the dehardened cells, on the other hand, streaming was active and Brownian movement was apparent in the currents. Yet, if the dehardened cells were observed immediately after sectioning, no streaming and little or no Brownian movement was discernible. The protoplasm showed much less peripheral clumping than in the hardened cells. Hardened and unhardened cabbage cells both exhibited Brownian movement, but no difference in the activity could be distinguished.

Plasmolysis shape was next observed. Sections of hardened and dehardened *Catalpa* were placed on a slide in an isotonic solution of CaCl_2 (0.30 M and 0.18 M, respectively) which was allowed to evaporate in the air. At the end of four hours the cells were strongly plasmolyzed in both, but the shape differed. The hardened cells were well-rounded, the dehardened ones were strongly concave, adhering to the wall in many places (fig. 3).

In the case of cabbage, sections from hardened and unhardened seedlings were placed in twice isotonic dextrose and examined from time to time. Though the difference was not so striking as in the case of *Catalpa* cells, the rate of rounding up appeared somewhat more rapid in the hardened cells (table IV).

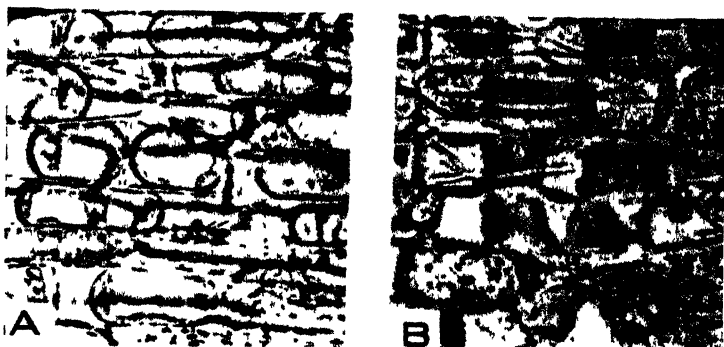


FIG. 3. Plasmolysis shape in hardened (A) and dehardened (B) *Catalpa* cells in isotonic CaCl_2 solutions after evaporation in air for six hours.

TABLE IV

RATE OF ROUNDING UP ("PLASMOLYSIS TIME") OF UNHARDENED AND HARDENED CABBAGE CELLS IN TWICE ISOTONIC DEXTROSE. EACH AN AVERAGE OF THREE PLANTS

| SAMPLES | NON-HARDENED | | HARDENED | |
|---------|------------------|------------------|------------------|------------------|
| | OSMOTIC PRESSURE | PLASMOLYSIS TIME | OSMOTIC PRESSURE | PLASMOLYSIS TIME |
| 1. | 10.0 | 90 | 13.6 | 60 |
| 2. | 10.6 | 75 | 13.6 | 60 |
| Av. | 10.3 | 82 | 13.6 | 60 |

RESISTANCE TO DEPLASMOLYSIS.—Another mode of experimentation also gave definite and positive results. Sections of hardened and unhardened cabbage plants were compared as regards the ability of the protoplasts to withstand the stretching caused by rapid deplasmolysis. The tendency to injury from this cause generally increases with viscosity of the protoplasm.

First the cells were plasmolyzed for 15 to 20 minutes in twice isotonic CaCl_2 and then transferred to distilled water. To determine the number of cells surviving deplasmolysis, the sections were once more transferred to the plasmolyzing solution. The results are presented in table V.

Tender plants always showed sensitivity to deplasmolysis. Thus, *Cordyline* petiole cells almost all burst when transferred to distilled water from twice isotonic CaCl_2 . In the case of others (tomato, bean), it was found impossible to determine urea permeability, since even this slow deplasmolysis proved fatal.

Hardened and dehardened *Catalpa* cells were then tested, but in their case more severe treatment was necessary to cause injury. Treatments and results are given in table VI.

TABLE V

COMPARISON OF DEPLASMOLYSIS INJURY IN HARDENED AND UNHARDENED CABBAGE CELLS.
PLASMOLYZED IN TWICE ISOTONIC CaCl_2 ; DEPLASMOLYZED IN DISTILLED WATER

| CONDITION OF PLANT | OSMOTIC PRESSURE (M CaCl_2) | PERCENTAGE OF SURVIVING CELLS | |
|---------------------------------|--|---------------------------------|---------|
| | | IN EPIDERMIS AND CHLORENCYMA | IN PITH |
| Non-hardened ⁺ | 0.16 | trace | 0 |
| 5-day hardened | 0.23 | most | 0 |
| Non-hardened | 0.17 | few | 0 |
| 10-day hardened | 0.25 | all | many |

TABLE VI

COMPARISON OF DEPLASMOLYSIS INJURY IN HARDENED AND DEHARDENED *CATALPA* CELLS

| CONDITION OF PLANT | TIME IN PLASMOLYTE (MIN.) | NUMBER OF SURVIVING CELLS |
|---|---------------------------|---------------------------|
| (a) PLASMOLYZED IN 9 PARTS 2M NaCl : 1 PART 2M CaCl_2 . DEPLASMOLYZED IN DISTILLED WATER | | |
| Dehardened | 60 | few |
| Hardened | 360 | all |
| (b) PLASMOLYZED IN 3M NaCl . DEPLASMOLYZED IN DISTILLED WATER | | |
| Dehardened | 15 | none |
| Hardened | 15 | almost all |

Further evidence was obtained indicating that this difference in ability to withstand deplasmolysis injury is even more marked at low temperatures. Thus a much less severe treatment than the above, namely a transfer from twice isotonic to half isotonic dextrose, caused no injury to either at room temperature. Even at 0°C ., this procedure had no harmful effect on hardened cells but was fatal to the unhardened, due to the increased viscosity in the latter, which was apparently such as to more than counteract the decreased protoplasmal stress resulting from the reduced deplasmolysis rate.

It is thus evident that hardened cells are more resistant to the ill effects of deplasmolysis than are unhardened cells, and this in spite of the more rapid rate in the former.

Discussion

Reviewing the changes said to be associated with hardening, we have seen that some are not well established and that no single one is adequate to explain the whole phenomenon. Our own research on living cells confirms the importance of certain changes in the sap and brings to light others in the protoplasm. The significance and relative importance of these is difficult

to evaluate from lack of knowledge of the exact mode or modes of injury. The nature of the protection is inferred mainly from the nature of the hardening change.

A wide range of protection is possible with those changes that reduce freezing. Of these, supercooling is not fundamental because hardy tissues survive severe freezing; theoretically, supercooling may even be harmful by leading to intracellular ice development during the quick freezing which follows its breakdown. A rise in osmotic pressure is generally well correlated with hardiness, but in all true hardening it fails to explain more than a fraction of the increased resistance.

Enhancing the osmotic effect in woody plants is a marked increased in "non-solvent space" in the sap vacuole. Part of this is due to insoluble solid—apparently hydrophilic colloid—and part to bound water. This change causes the osmotic pressure to mount more rapidly as the cell contracts and sets a higher limit to the minimum volume which can be reached through water loss. It is calculated that hardened *Catalpa* cells lose no more water through freezing at the lowest possible temperature than the unhardened cells do at only -6°C .

The gelatinous condition of the sap in tree cells may serve another purpose. In ordinary herbaceous plants, intracellular freezing—when it occurs—is located in the sap vacuole. In other words, this is the vulnerable part of the cell as regards the invasion of ice, and such invasion is usually fatal. But in hardy tree cells the vacuole is as rich in hydrophilic colloid as the protoplasm and probably equally protected from freezing even when the eutectic point of the sap is reached.

Important though these factors may be in resistance to extreme cold, they are not the full explanation of hardiness. For example, in the non-hardy state, tree cells still have much colloid in their sap, but they are then more sensitive to frost than hardened cabbage cells which have no colloid and about the same osmotic pressure.

Other changes in the sap have not been shown to be of any great significance. Of those which are supposed to offset the danger of salting out through concentration of the sap, a reduction, with hardening, of the total electrolytes has so far been proved in one or two cases only and disproved in others. Also, in spite of a permeability increase on hardening, there is no evidence of exosmosis from the cells in winter time. Moreover, a high concentration of salt (KNO_3) has been produced inside cells without injury. As regards the theory of toxic acidity of the sap, a reduction of H-ion concentration in hardening has been found in several cases, but only to a slight degree, while artificial alteration of the acidity of the sap is without effect on frost resistance.

The view that the sugars, which are responsible for most of the osmotic change, also exert a specific protection against coagulation of the protoplasm

is countered by the fact that increase of sugar may take place naturally or be produced artificially without a true hardening effect.

As regards changes in the protoplasm, a widely held view is that hardening is accompanied by an *increase of hydrophilic colloid* and consequently of resistance to freezing, to dehydration, and to coagulation.

In attempting to investigate this problem with living cells, in which alone the hydrophilic property of protoplasm is normal, we have seen that in cases where the protoplasm does not swell appreciably in hardening, it may nevertheless be more hydrated if, as seems probable, its insoluble solids diminish. Where swelling does occur the conclusion is more definite.

Evidence regarding changes in the *stability* of the protoplasmic colloids is not decisive. Contradictory results have been obtained with press juices, and with living cells we find that hardening confers no increase of resistance to the action of acid or heat, agents which coagulate proteins.

Altogether, the possibility that frost injury is a physico-chemical effect of dehydration is opposed by the fact that tender cells may often be deprived of water by other means than frost without ill effect. The alternative is mechanical injury. Whatever the precise nature of this injury, the sap changes which tend to reduce the amount of freezing ought to afford some protection; but as we have seen these are not enough.

It would seem that in addition the protoplasm must become more resistant to the mechanical action. Apart from the evidence of a possible colloidal change, which we have just discussed, proof of two very pronounced protoplasmic changes has been deduced in the course of our work, *viz.*, an increase in permeability and what may for convenience be termed a fall of viscosity. Let us see if these two hardening changes can be fitted into a scheme of protection against such types of mechanical injury as are known to occur. At least three modes of mechanical injury have been recorded by various authors from direct observation of cells.

INTRACELLULAR FREEZING.—Ice formation within the cell has sometimes been noted and though confined to the vacuole the result is nearly always fatal. The mechanism of injury in this case may be, as ILJIN suggests, compression of the protoplasm between the freezing and expanding sap on the inside and the cell wall or a rigid hull of ice on the outside, or it may also be laceration of the vacuolar membrane and other structures by the ice crystals.

At any rate, the condition for internal freezing is that the temperature of the cell sap fall below its freezing point. Ice first starts to form on the cell walls outside the cells, where it normally grows at the expense of water which diffuses from cells. If this keeps pace with the fall of temperature, the resulting increase in its concentration will prevent the sap from freezing, but with a sudden drop of temperature or sudden crystallization as a result of supercooling, the rate at which water can pass out of the cell may be the

limiting factor in deciding whether or not ice will penetrate. Here, then, is a condition when high water permeability may mean safety to the cell.

INTERCELLULAR ICE MASSES.—It is frequently found that when plants which are not hardy are exposed to temperatures slightly below freezing point, large ice masses develop locally in the tissues. These in their growth crush the cells in the neighborhood and may even tear the tissues apart. Since the size of crystals is a function of rate of crystallization, macrocrystalline ice is naturally found only when very gradual freezing takes place, but the more moderate aggregates which develop under other conditions may also caused injury to the cells in contact with them. Conceivably, the rate of crystallization may sometimes depend upon the rate at which water can pass out of the cells, so that the higher the cell permeability to water the smaller the crystals and the less the danger of injury from pressure. It must be admitted, however, that the rate of exosmosis of water from even non-hardy cells is such that this hypothesis of protection is less plausible than that applied to internal freezing.

THAWING.—ILJIN, backed by his experiments, has revived SACHS's hypothesis of death during thawing. His results cannot controvert the finding of many authors that death may occur in freezing, but they do seem to prove that with the use of salt or sugar solutions, frozen tissues which are still alive may be saved from dying at the stage of thawing out.

Danger would seem to attend both phases of thawing, namely, pseudoplasmosis, and deplasmolysis. During the former, as ILJIN showed, the water released by thawing is taken up by the cell wall faster than by the protoplast. The former extends quickly to its normal size, while the latter remains contracted for a time. As in true plasmolysis, injury is liable to occur here under certain conditions. If the protoplast adheres to the wall in places, its plasma membrane tends to become disorganized through stretching, or if the external membrane allows water to pass more freely than the vacuolar membrane, the cytoplasm swells and becomes vacuolated. These mishaps in thawing would be avoided if the permeability of the protoplast to water approached that of the wall, and if the permeability of the tonoplast also equalled that of the ectoplast. In other words, increased permeability of the protoplasm, and especially of the tonoplast layer, which normally seems to be the less permeable (HÖFLER), would tend to protect the cell from mechanical injury of this kind. Wall and protoplast would extend together without any pseudoplasmosis.

According to ILJIN's later observations, however, the main damage is caused by the rapid stretching in deplasmolysis. The rate of expansion would only be exaggerated by greater permeability to water, but apparently a compensating change in the physical properties of the protoplasm is another feature of the hardening process.

The cells become much more resistant to injury by rapid deplasmolysis

after true plasmolysis, and we may assume that the same would be the case after pseudoplasmolysis in thawing.

The difference between hardened and unhardened cells in this respect is greater at the low temperature at which thawing out occurs than at room temperature. It is probably the result of a lower viscosity of the protoplasm in hardened plants and also a smaller effect of temperature upon its viscosity.

PLASMOLYSIS DUE TO FREEZING.—That cells do plasmolyze sometimes on freezing with formation of ice between the wall and the protoplast is a matter of observation (*e.g.*, CHAMBERS and HALL, 3), but unlike the previous conditions cited, the injury here is hypothetical. Injury in ordinary plasmolysis is common when the protoplasm is highly viscid and adhering to the wall. Low temperature tends to make protoplasm more viscous and hence more liable to injury of this type. As we have seen, the behavior of hardened cells on plasmolysis is exactly such as to reduce this danger. Another advantage of smoother plasmolysis is that strands of protoplasm are less liable to be pinched off by the investing ice.

COLLOIDAL CHANGES IN HARDENING.—The different behavior of hardened cells, both in deplasmolysis and plasmolysis, is such as may be explained by a lowering of viscosity, either of the protoplasm as a whole or at least of its superficial layer. In a visco-elastic material like protoplasm, such a change in consistency is due to gel \rightarrow sol transformation rather than the true viscosity reduction of a Newtonian liquid. Increased hydration of particles which should increase *true* viscosity may tend towards solation and reduction of *apparent* viscosity. If this should be accompanied by increased hydration of the protoplasm *en masse*, the effect is still more likely to follow.

These are the colloidal changes which our volumetric experiments and other observations have led us to regard as probable. They are also the changes which increase of permeability points to—as regards the plasma membranes at least.

The chemical nature of the colloids involved does not enter into our work, but inasmuch as the osmotic changes are largely produced by carbohydrate transformation, it is likely that the hydrophilic colloid which occupies so much of the ~~sap~~ of hardy tree cells belongs to the same category. This would explain the ~~simultaneous~~ fluctuation of osmotic and colloid substance. The parallel ~~variation~~ of protoplasmic viscosity, and especially permeability, suggests that proteins and lipoids undergo the same type of change as the carbohydrates.

The linked series of changes associated with hardness as we have described them may be summarized as follows:

1. Complicated hydrolytic breakdown of carbohydrates increases the osmotic pressure of the cell and also in the hardier plants the non-solvent space in the vacuole at the expense of starch and perhaps of other reserves held in the cytoplasm.

2. Due to similar changes in the protoplasmic colloids, the whole cytoplasm, probably, and the plasmic membranes, almost certainly, become more hydrated.

3. As a consequence of this change, the viscosity of the protoplasm is lowered.

4. Because of the change in the membranes in particular, cell permeability is increased.

If all of these changes are causally connected one with another, the correlation of each and all of them with frost resistance would be found, though only one might play a part in it. We have theorized as to the possible rôle of each, but a satisfactory demonstration requires more knowledge of the mechanisms both of injury and of resistance than we yet possess.

Summary

1. Cell changes in hardening are reviewed and theories of the mechanism of frost resistance are discussed. The following are features of hardened as compared with unhardened cells, according to our own results with the plants named:

Resistance to injury by deplasmolysis is greater.

Rate of rounding up in plasmolysis is greater (*Catalpa*, cabbage, etc.).

(Two differences which may point to lower "viscosity.")

The relative volume of protoplasm and vacuole changes but little if at all (apple cortex, onion).

Resistance to acid and to heat does not change (cabbage).

2. Also the following are features which have been reported in a previous paper:

The osmotic pressure is increased, especially in the hardier woody plants (many woody and herbaceous species).

Non-solvent space (= colloids and bound water), if present in measurable amount, increases markedly (*Catalpa* and *Liriodendron*), but the increase is greater in the vacuole than in the protoplasm (*Catalpa*).

Non-solvent space is practically absent in cabbage, hardened as well as unhardened.

Permeability to polar compounds increases, and the more the increase the hardier the plant (many woody and herbaceous species).

3. The press juice of hardened cabbage plants shows:

Precipitation of colloids over a wider zone in the pH scale.

H-ion concentration slightly lower.

Buffering capacity unchanged.

4. Artificial change in the H-ion concentration of the sap in life does not affect hardness (cabbage).

5. The most pronounced and unmistakable changes in the protoplasm are increased permeability and lowered viscosity; in the vacuole, increased osmotic pressure and (in trees) non-solvent space. Ways are suggested in which all of these protect the cells against mechanical injury due to frost.

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Nephrodium oligophlebium, BAK., in Journ. Bot. IV. p. 291 (1875); H. CHR., in Bull. Herb. Boiss. IV. p. 671 (1896)

Aspidium seligerum, (non KUHN.) LUERSS., in Engl. Bot. Jahrb. IV. p. 360 (1883)

Aspidium oligophlebium, (BAK.) CHRIST, in WARB. Mons. I. p. 81 (1900), et in Bull. Herb. Boiss. 2. sér. IV. p. 616 (1904); MATSUM., Ind. Pl. Jap. I. p. 288 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 580 (1906)

Nom. Jap. *Himewarabi*

Leg. Ipse, Aug. 20, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Malay, Polynesia.

Note. It grows on somewhat sunny ground in the lauri-aciculisilvae, and is common in the Far East.

Dryopteris parasitica, O. KUNTZE, Rev. Gen. Pl. II. p. 811 (1891); HAY., Mat. Fl. Formos. p. 421 (1911); NAK., Fl. Kor. II. p. 394 (1911), et in Bull. Biogeogr. I. p. 251 (1930); MATH., in Journ. Linn. Soc. XXXIX. p. 365 (1911); MERR., Enum. Hainan Pl. p. 9 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 64 (1931); OGATA, Ic. Fil. Jap. IV. Pl. 174 (1931)

Syn. *Polypodium parasiticum*, LINN., Sp. Pl. ed. I. p. 1090 (1753)

Aspidium parasiticum, SW., in Schrad. Journ. 1800² p. 35 (1801); H. CHR., Farnk. Erd. p. 243 (1897); CHR., in WARB. Mons. I. p. 78 (1900)

Aspidium molle, SW., in Schrad. Journ. 1800² p. 34 (1801); FR. et SAV., Enum. Pl. Jap. II. p. 242 (1876)

Nephrodium molle, R. BR., Prodr. Fl. Nor. Holl. p. 149 (1810); BAK., in Journ. Bot. XXIII. p. 105 (1885); YABE, in Tokyo Bot. Mag. XVI. p. 48 (1902); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 349 (1912)

Nephrodium parasiticum, DESV., Prodr. Fam. Foug. p. 260 (1827); MATSUM., Ind. Pl. Jap. I. 322 (1904)

Nom. Jap. *Kehosida*

Leg. Ipse, ca. Issô, Mart. 21, 1923.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, India, Australia, New-Zeeland, Tropical Africa.

Note. The fern grows in the lauri-aciculisilvae and in the laurisilvae, from a low altitude to about 700 m above the sea level. The species is common in southern Japan.

Dryopteris Sabaei, C. CHR., Ind. Fil. p. 290 (1905) et (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 367 (1911); TAKEDA, in Tokyo Bot. Mag. XXIV. p. 319 (1910); KODAMA, in MATSUM. Ic. Pl. Koishik. I. pp. 137, 138, Pl. LXIX. (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); OGATA, Ic. Fil. Jap. I. Pl. 24 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 16 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 66 (1931)

Syn. *Aspidium Sabaei*, FR. et SAV., Enum. Pl. Jap. II. p. 259 (1876), et p. 632 (1879) *Nephrodium Filix-mas*, RICH. var. *Sabaei*, CHR., in Bull. Herb. Boiss. VII. p. 822 (1839); MATSUM., Ind. Pl. Jap. I. pp. 319, 384 (1904)

Nom. Jap. *Miyama-itatisida*

Leg. Ipse, Jun. 11, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, China.

Note. The fern occurs as undergrowth in the forests of laurisilvae and in the lauri-aciculisilvae. The species is common in the mountain regions of Eastern Asia.

- Dryopteris sparsa**, O. KUNTZE, Rev. Gen. Pl. II. p. 813 (1891); MATH., in Journ. Linn. Soc. XXXIX. p. 367 (1911); HAY., Mat. Fl. Formos. p. 422 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); MAK. et NAM., Fl. Jap. ed. 2. p. 68 (1931)
Syn. *Nephrodium sparsum*, DON., Prodr. Fl. Nepal. VI. (1925); HOOK. et BAK., Syn. Fil. p. 276 (1867); DIELS, in Fl. Cent. Chin. p. 191 (1900)
Aspidium sparsum, SPR., Syst. IV. p. 106 (1827); CHR., Farnk. Erd. p. 262 (1897)
Lastrea sparsa, MOORE, Ind. Fil. pp. 87 et 104 (1858)
Polystichum sparsum, KEYS, Pol. Cyath. Herb. Bung. pp. 43, 104 (1873)
Nom. Jap. *Nagabanoitatisida*
Leg. Ipse, Jun. 8, 1928.
Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China, India, Ceylon, Malay.
Note. The fern grows on the trunks of laurigenous trees or in the lauri-aciculisilvae, and it is rather rare in the island.

- Dryopteris subexaltata**, CHR., Ind. Fil. p. 295 (1905); MATH., in Journ. Linn. Soc. XXXIX. p. 367 (1911); OGATA, Ic. Fil. Jap. II. Pl. 75 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 68 (1931)
Syn. *Aspidium subexaltatum*, CHRIST, in Bull. Herb. Boiss. 2. sér. IV. p. 616 (1904)
Nom. Jap. *Inutama-sida*
Leg. Ipse, Onoaida, Mart. 16, 1930.
Distr. Okinawa, Taiwan.
Note. The fern grows in the submountain or in the laurigenous forests, and the species has its northern limit in this island.

- Dryopteris sublaxa**, HAY., Ic. Pl. Formos. IV. p. 183, f. 121 (1914); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 1929; MAK. et NAM., Fl. Jap. ed. 2. p. 69 (1931)
Syn. *Dryopteris arisanensis*, ROSENB., in Hedwig. LXI. p. 340 (1915)
Nom. Jap. *Sima-yawarasida*
Leg. Ipse, Kosugidani, Mart. 18, 1923.
Distr. Taiwan.
Note. In the Cryptomeria forest, the fern grows as undergrowth. The species is not known to be found in lands further north than this island.

- Dryopteris subtripinnata**, O. KUNTZE, Rev. Gen. Pl. II. p. 811 (1891); MATH., in Journ. Linn. Soc. XXXIX. p. 368 (1911); NAK., Fl. Kor. II. p. 390 (1911); YAMAZUTA, List Manch. Pl. p. 4 (1930); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 14 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 69 (1931)
Syn. *Aspidium subtripinnatum*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 179 (1867)
Nephrodium chinense, BAK., in HOOK. et BAK. Syn. Fil. p. 278 (1867)
Nephrodium subtripinnatum, BAK., in HOOK. et BAK., Syn. Fil. p. 455 1868
Nom. Jap. *Hosoba-no-itatisida*
Leg. Ipse, Aug. 13. 1924.
Distr. Yezo, Honsyû, Kyûsyû, Korea, Manchuria, China.
Note. The fern grows as undergrowth in the lauri-aciculisilvae about 800 m above the sea level. The species is rather common in Japan, but is not yet reported in Ryûkyû and Taiwan.

Dryopteris totta, (WILLD.) MASAMUNE, comb. nov.

Syn. *Polypodium tottum*, WILLD., Sp. Pl. V. p. 201 (1810)

Gymnogramme Totta, SCHL., Adumb. p. 15, t. 6 (1825); BL., Fl. Jav., I. t. 38, p. 90 (1828); HOOK., Sp. Fil. V. p. 138 (1865); HOOK. et BAK., Syn. Fil. p. 376 (1868); FR. et SAV., Enum. Pl. Jap. II. p. 247 (1876)

Polypodium africanum, DESV., Prodr. Fam. Foug. p. 239 (1827)

Gymnogramma apidioides, BL., Enum. Pl. Jav. I. p. 112 (1828)

Grammitis Blumeana, PRESL., Tent. Pterid. p. 209 (1836)

Leptogramma Lovei, J. SM., in Journ. Bot. IV. p. 52 (1841)

Leptogramma totta, J. SM., in HOOK. Journ. Bot. IV. p. 52 (1841), et Fern. Brit. and Foreign. p. 24 (1896); NAK., in Tokyo Bot. Mag. XLV. p. 104 (1931)

Phegopteris totta, METT., Pheg. u. Asp. p. 18, n. 31 (1858), et in Ann. Mus. Bot. Lugd. Bat. I. p. 223 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 176 (1867); MAK., in Tokyo Bot. Mag. IX. p. 246 (1895); CHR., Farnk. Erd. p. 272 (1897), et in WARB. Mons. I. p. 82 (1900)

Aspidium totta, ENGL., Hochgebirgsf. Trop. Afr. p. 99 (1892)

Nephrodium Totta, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 170 (1898); MATSUM., Ind. Pl. Jap. I. p. 326 (1904)

Dryopteris africana, C. CHR., Ind. Fil. p. 251 (1906); NAK., Fl. Kor. II. p. 394 (1911), et Veg. Isl. Quelp. no. 11 (1914); MAK. et NEM., Fl. Jap. ed. 1. p. 1608 (1925), et ed. 2. p. 51 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 27 (1929); OGATA, Ic. Fil. Jap. I. Pl. 20 (1928); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 21 (1930)

Leptogramma africana, (DESV.) NAK. apud MORI, Enum. Pl. Cor. p. 13 (1922)

Nom. Jap. *Mizosida*

Leg. Ipse, Jul. 16. 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, India.

Note. This species grows from a low altitude up to about 700 m above the level of the sea, and it is rather common in southern Japan.

Dryopteris unita, O. KUNTZE, Rev. Gen. Pl. II. p. 811 (1891); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 71 (1931)

Syn. *Polypodium unitum*, LINN., Syst. Nat. ed. 10. II. p. 1326 (1759)

Polystichum unitum, GAUD., Freycinet. Voy. Bot. p. 325 (1827)

Nephrodium unitum, BORY, Bel. Voy. Bot. II. p. 61 (1833); HOOK. et BAK., Syn. Fil. p. 289 (1867); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 178 (1899); MATSUM., Ind. Pl. Jap. I. p. 327 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 578 (1906); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 348 (1912)

Aspidium unitum, SIEB.; METT., Pheg. u. Asp. p. 107 n. 257 (1858)

Nom. Jap. *Tetu-hosida*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, India.

Note. I have not yet found this species in the island, but Dr. KUDO told me that he had collected the species in the island. The species is rather common in the southern lands of Japan.

Dryopteris Yabei, HAY., Mat. Fl. Formos. p. 424 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 72 (1931)

Nom. Jap. *Itati-sida-modoki*

Leg. Ipse, Jul. 25, 1924.

Distr. Taiwan.

Note. The species occurs rarely in the lauri-aciculisilvae about 400 m above the sea level. It has its northern limit in this island.

Dryopteris yaku-montana, MASAMUNE, in Journ. Trop. Agr. IV. p. 76 (1932)

Nom. Jap. *Yakusima-syorima*

Leg. Ipse, Aug. 31, 1926.

Note. On sandy soil formed by the crumbling of granite, from a high altitude of about 1700 m up to almost the top of Yaegatake.

Hypodematium, KUNZE, in Flora 1833' p. 690 (1833)

Hypodematium crenatum, KUHN., v. Deck. Reis. III. Bot. p. 37 (1879); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929)

Syn. *Polypodium crenatum*, FORSK. Fl. Aegypt. Arab. p. 185 (1775)

Nephrodium hirsutum, DON, Prodr. Fl. Nep. p. 6 (1825)

Cystopteris odorata, DESV., Prodr. Foug. p. 264 (1827)

Aspidium eriocarpum, WALL., List n. 342 (1828)

Lastrea eriocarpa, PRESL, Tent. Pt. p. 77 (1836)

Nephrodium eriocarpum, DECNE, Arch. Mus. II. p. 185 (1841)

Nephrodium odoratum, BAK., in HOOK. et BAK. Syn. Fil. p. 280 (1867)

Aspidium crenatum, KUHN, Fil. Afr. p. 129 (1868)

Lastrea crenata, BEDD., Fern. Br. Ind. Supp. p. 18 (1876)

Nephrodium crenatum, BAK., Fl. Maur. p. 497 (1877); DUNN et TUTCH., Fl.

Kwangt. and Hongk. p. 348 (1912)

Dryopteris crenata, O. KUNTZE, Rev. Gen. Pl. II. p. 811 (1891); MATH., in

Journ. Linn. Soc. XXXIX. p. 361 (1911); HAY., Ic. Pl. Formos. IV. p. 149.

f. 88, A-B (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 54 (1931)

Nom. Jap. *Kinmô-warabi*

Leg. Ipse, Inter Ambô et Kosugidani, Jul. 1928.

Distr. Honsyû, Sikoku, Taiwan, China, India.

Note. In the island the fern grows from the sea level up to about 500 m, and very often it is found as undergrowth in the laurisilvae. The species is common in the Far East.

Aspidium, SWARTZ, in Schrad. Journ. 1800². p.

29 (1801) p.p.; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 183 (1899)

Syn. *Deparia*, HOOK. et GREIV., Ic. Fil. t. 154 (1829)

Dictyopteris, PRESL, Tent. Pt. p. 194 (1836)

Pleocnemia, PRESL, Tent. Pt. p. 183 (1836)

Sagenia, PRESL, Tent. Pt. p. 86 (1836)

Bathmium, LINK, Fil. Sp. pp. 99, 144 (1841)

Cardiochaena, FÉE, Gen. Fil. p. 314 (1850-52)

Dryomenis, FÉE, Gen. Fil. p. 225 (1850-52)

Podopeltis, FÉE, Gen. Fil. p. 286 (1850-52)

Cionidium, MOORE, Gard. Comp. p. 143 (1852), et in Proc. Linn. Soc. II. p. 212 (1854)

Dictyocline, MOORE, Gard. Chron. p. 854 (1855), et Ind. Fil. LIX. (1857)

Aspidium Griffithii, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 186, f. 96 G. (1899); MATSUM., Ind. Pl. Jap. I. p. 287 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 579 (1906); CHR., Ind. Fil. p. 76 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 343 (1911); OGATA, Ic. Fil. Jap. I. Pl. 6 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 23 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 20 (1931)

Syn. *Dictyocline Griffithii*, MOORE, Ind. Fil. LIX. (1857)

Hemionitis Wilfordii, HOOK., Fil. Exot. t. 93 (1859)

Hemionitis Griffithii, HOOK. f. et THOM.: HOOK. f., Sp. Fil. V. p. 192 (1864); HOOK. et BAK., Syn. Fil. p. 399 (1868); BAK., in Journ. Bot. XXIII. p. 107 (1885); CHRIST, in Bull. Herb. Boiss. IV. p. 674 (1896); HENRY, List Pl. Formos. p. 116 (1896)

Dictyocline Wilfordii, J. SM., Hist. Fil. p. 149 (1875)

Hemionitis Griffithii, HOOK. f. et THOM. var. *pinnata*, MAK., in Tokyo Bot. Mag. X. p. 286 (1896)

Nom. Jap. *Amisida*

Leg. Ipse, ca. Onoaida, Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, China.

Note. The species is rather common in the Far East. It occurs in the laurisilvae or in the lauri-aciculisilvae at a low altitude, up as far as 600 m.

Polystichum, ROTH, Rom. Mag. II. 1. p. 106 (1799); BERNH., in Schrad. Journ. p. 298 (1799); ROTH, Tent. Fl. Germ. III. p. 69 (1800); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 189 (1899)

Syn. *Hypopeltis*, MICHAUX, Fl. Bor. Am. II. p. 226 (1803)

Cyrtomium, PRESL, Tent. Pt. p. 86 (1836)

Ptilopteris, HANCE, in Journ. Bot. XII. p. 138 (1884)

Adenoderris, J. SMITH, Hist. Fil. p. 222 (1875)

Polystichum aculeatum, SCHOTT. var. *japonicum*, CHRIST, in Ber. Schweiz. Bot. Ges. p. 3. (1893); NAK., Fl. Kor. II. p. 398 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 97 (1931)

Syn. *Polystichum aculeatum*, ROTH; MATSUM. et HAY., Enum. Pl. Formos. p. 581 (1906) p.p.

Nom. Jap. *Inode*

Leg. Ipse, Aug. 3, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea.

Note. The fern abundantly grows in the Cryptomeria forest from 700 m to 900 m above the sea level. The species is widely distributed in southern Japan.

Polystichum amabile, (BL.) J. SMITH, Ferns. Br. and For. p. 152 (1866), et p. 152 (1896); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 193 (1899); MATSUM., Ind. Pl. Jap. I. p. 340 (1904); COPEL., Polyp. Philipp. p. 17 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 582 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 385 (1911); MAK. et NEM., Fl. Jap. ed. 1. p. 1655 (1925), et ed. 2. p. 98 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929)

Syn. *Aspidium amabile*, BL., Enum. Pl. Jav. p. 165 (1828); HOOK., Sp. Fil. IV. p. 25, t. 225 (1862); METT., in Ann. Mus. Bot. Lugd. Bat. I. p. 227 (1864); HOOK. et BAK., Syn. Fil. p. 254 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 232 (1876); HARRINGT., in Journ. Linn. Soc. XVI. p. 29 (1877); BAK., in Journ. Bot. XXIII. p. 105 (1885); MAK., in Tokyo Bot. Mag. X. p. 286 (1896); HENRY, List Pl. Formos. p. 113 (1896); CHR., in Warb. Mons. I. p. 78

(1900); COPEL., Polyp. Philipp. p. 17 (1905); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 345 (1912)

Polystichum rhomboideum, SCHOTT., Gen. Fil. ad t. 9 (1834)

Lastrea amabilis, MOORE, Ind. Fil. p. 85 (1858)

Dryopteris amabilis, O. KUNTZE, Rev. Gen. Pl. II. p. 812 (1891)

Polystichum aristatum, (non PRESL) MORI, Enum. Pl. Cor. p. 16 (1922)

Nom. Jap. *Kana-warabi*

Leg. Ipse, Aug. 5 1924.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines. Java.

Note. The fern grows as undergrowth in forests from nearly the sea level up to about 800 m. It is rather common in southern Japan.

Polystichum aristatum, PRESL, Tent. Pterid. p. 83 (1836); MATSUM., Ind. Pl. Jap. I. p. 341 (1904); COPEL., Polyp. Philipp. p. 17 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 582 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 335 (1911); NAK., Fl. Kor. II. p. 400 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 98 (1931)

Syn. *Polypodium aristatum*, FORST, Fl. Ins. Aust. Prodr. p. 82 (1786)

Aspidium aristatum, SW., in Schrad. Journ. 1800². p. 37 (1801); HOOK. et BAK., Syn. Fil. p. 255 (1868); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 346 (1912)

Nephrodium aristatum, PRESL, Pt. Relid. Haenk. I. p. 37 (1825)

Lastrea aristata, MOORE, Ind. Fil. p. 85 (1858)

Dryopteris aristata, O. KUNTZE, Rev. Gen. Pl. II. p. 812 (1891)

Nom. Jap. *Hosoba-kanawarabi*

Leg. Ipse, Jul. 14, 1922.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China, Philippines.

Note. The species is found as undergrowth in the laurisilvae or in the lauriculilvae, and it is rather common in the southern parts of Japan.

Polystichum auriculatum, PRESL, Tent. Pterid. p. 83 (1836); BEDD., Fern. South. Ind. p. 41. t. 120 (1863); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 189 (1899), et Fl. Cent. Chin. p. 192 (1900); COPEL., Polyp. Philipp. p. 16 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 583 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 385 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 99 (1931)

Syn. *Polypodium auriculatum*, LINN., Sp. Pl. ed. 1. p. 1088 (1753)

Aspidium auriculatum, SW., Schrad. Journ. 1800². p. 31 (1801); HOOK. et BAK., Syn. Fil. p. 251 (1867)

Nephrodium auriculatum, RICH., Sert. Astrol. XLIV. (1834)

Dryopteris auriculata, O. KUNTZE, Rev. Gen. Pl. II. p. 812 (1891)

Nom. Jap. *Taiwan-nokogiri-sida*

Leg. Ipse, Onoaida, Jul. 1. 1928.

Distr. Taiwan, Philippines, China, India.

Note. It grows in the laurisilvae as undergrowth. The species has not yet been known to be found in lands further north than Yakusima.

Polystichum falcatum, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 194 (1899); MAK. et NEM., Fl. Jap. ed. 2. p. 100 (1931)

var. **genuina**, MAK., in Tokyo Bot. Mag. X. p. (212) (1896); MATSUM., Ind. Pl. Jap. I. p. 342 (1904); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929); YAMAZUTA, List Manch. Pl. p. 6 (1930)

Nom. Jap. *Oni-yabusotetu*

Leg. Ipse, Kusugawa, Jun. 14, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Bonins, Manchuria.

Note. The fern grows near the seashore, on lowlands, or on rocky places.

Polystichum lepidocaulon, J. SMITH, Fern. Brit. and Foreign, p. 286 (1896); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 190 (1899); MATSUM., Ind. Pl. Jap. I. p. 343 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 584 (1906); NAK., Fl. Kor. II. p. 400 (1911); MAK. et NEM., Fl. Jap. ed. 1. p. 1568 (1925), et ed. 2. p. 102 (1931)

Syn. *Aspidium lepidocaulon*, HOOK., Sp. Fil. IV. p. 12. t. 217 (1862); METT., in Ann. Mus. Bot. Lugd. Bat. I. p. 226 (1864); FR. et SAV., Enum. Pl. Jap. II. p. 230 (1876)

Nom. Jap. *Orizuru-sida*

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea.

Note. The fern grows as undergrowth in the laurisilvae, mostly at the low altitudes. Sometimes it grows on rocks. The species is common in the southern parts of Japan.

Polystichum Tachiroanum, TAGAWA., in Act. Phit. Geogr. I. p. 29 (1932)

Syn. *Polypodium Tachiroanum*, LUERS., in Engl. Bot. Jahrb. IV. p. 362 (1883)

Polystichum integripinnum, HAY., Ic. Pl. Formos. IV. p. 196 (1914)

Cyrtomium integripinnum, COPL., in Philip. Journ. Sc. XXXVI. p. 136 (1929)

Cyrtomium Tachiroanum, CHR., in Amer. Fern. Journ. XX. p. 45 (1930)

Nom. Jap. *Hosoba-yabu-sotetu*

Leg. Ipse, Onoaida, 1928.

Distr. Kyûsyû, Okinawa.

Note. The species occurs rarely in the laurisilvae as undergrowth and is rare in southern Japan.

Polystichum Thunbergii, KOIDZ., in Tokyo Bot. Mag. XXXVIII. p. 106 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929)

Syn. *Polypodium setosum*, THUNB., Fl. Jap. p. 337 (1784)

Aspidium setosum, SWARTZ, Syn. Fil. p. 56 (1806); SPRENG., Syst. Veget. IV. p. 108 (1827); KUNZE, in Bot. Zeit. p. 572 (1848)

Aspidium varium, (non SW.) FR. et SAV., Enum. Pl. Jap. II. p. 233 (1876); CHR., in Bull. Herb. Boiss. 2. sér. I. p. 1015 (1901); KOM., Fl. Mansh. I. p. 130 (1901)

Polystichum varium, (non PRESL.) MATSUM., Ind. Pl. Jap. I. p. 344 (1904); MATH., in Journ. Linn. Soc. XXXIX. p. 388 (1911); NAK., Fl. Kor. II. p. 399 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 104 (1931)

Nom. Jap. *Itati-sida*

Leg. Ipse, Jul. 13, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, Manchuria, China.

Note. This is a common species in Japan. In Yakusima it grows in the lauriculisilvae or in the laurisilvae from the sea level up to 900 m.

Leptochilus, KAULFUSS, Enum. Fil. p. 147 (1824)

Syn. *Bolbitis*, SCHOTT, Gen. Fil. t. 14 (1834)

Gymnopteris, PRESL, Tent. Pterid. p. 244 1836; DIELS, in ENGL. u. PRANT, Nat. Pfl.-fam. I. iv. p. 198 (1899)

Campium, PRESL, Tent. Pt. p. 238 1836

Foecilopteris, PRESL, Tent. Pt. p. 241 1836

Cyrtogonium, J. SM., in Journ. Bot. III. p. 402 1841, et IV. p. 154 1842

Heteroneuron, FfE, Hist. Acrost. pp. 20, 91 1845

Cheilelepton, FfE, Hist. Acrost. p. 19 1845

Dendroglossa, PRESL, Epim. Bot. p. 149 1849

Anapausia, PRESL, Epim. Bot. p. 185 1849

Leptochilus virens, C. CHR., Ind. Fil. pp. 20, et 388 1905; HAY., Ic. Pl. Formos. V. p. 301 1915; MAK. et NEM., Fl. Jap. ed. 2. p. 76 1931

Syn. *Acrostichum virens*, WALL., List n. 1033 1828 nom.; HOOK. et GREV., Ic. Fil. II. t. 221 1831; HOOK. et BAK., Syn. Fil. p. 420 1968 p.p.

Bolbitis virens, SCHOTT., Gen. Fil. ad. t. 14 1834

Campium virens, PRESL, Tent. Pt. p. 239 1836

Cyrtogonium virens, J. SM., in Journ. Bot. IV. p. 154 1841

Poecilopteris virens, MOORE, Ind. Fil. XX. 1857

Gymnopteris contaminans, BEDD., Fern. Br. Sup. p. 27 1876

Leptochilus cuspidatus, non CHR. MASAMUNE, Prel. Rep. Veg. Yak. p. 29 1929

Nom. Jap. *Hekkasida*

Leg. Ipse, ca. Kosugidani, Jul. 16, 1928.

Distr. Kyūsyū, Amami-Ōsima, Taiwan, Bonins, Philippines, India, Australia.

Note. The fern grows as undergrowth in wet places, very often in the valleys. We can find it from the level of the sea up to 600 m. It occurs somewhat rarely in southern Japan

Nephrolepis, SCHOTT., Gen. Fil. t. 3 1834;

DIELS, in ENGL. u. PRANT, Nat. Pfl.-fam. I. iv. p. 205 1899

Syn. *Lepidoneuron*, FfE, Gen. Fil. p. 301 1850 52

Nephrolepis biserrata, SCHOTT., Gen. Fil. t. 3 1834, et Etting. Farn. tt. 134, 145 (1865); MAK., in Tokyo Bot. Mag. IX. p. 12 1895; MATH., in Journ. Linn. Soc. XXXIX. p. 374 1911; NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930; MAK. et NEM., Fl. Jap. ed. 2. p. 80 (1931)

Syn. *Aspidium biserratum*, SW., Schrad. Journ. 1800². p. 32 (1801

Aspidium acutum, SCHKUHR, Kr. Gew. I. p. 32, t. 31 (1806)

Nephrodium bisseratum, PRESL, Rel. Haenk. I. p. 31 (1825

Nephrodium acutum, PRESL, Rel. Haenk. I. p. 31 (1825)

Nephrodium acuminatum, PRESL, Rel. Haenk. I. p. 31 (1825)

Nephrodium splentens, DESV., Prodr. Foug. p. 253 (1827

Hypopeltis biserrata, BORY, Bél. Voy. Bot. II. p. 65 (1833)

Nephrolepis splendens, PRESL, Tent. Pt. p. 79 (1836

Nephrolepis Sieberi, PRESL, Tent. Pt. p. 79 (1836)

Nephrolepis acuta, PRESL, Tent. Pt. p. 79 (1836); HOOK., Sp. Fil. IV. p. 153

(1862); BEDD., Fern. South. Ind. p. 33, t. 94 (1863); HOOK. et BAK., Syn. Fil. p. 301 (1867); BAK., in Journ. Bot. XXIII. p. 105 (1885); CHR., in Warb. Mons. I. p. 84 (1900); HENRY, List Pl. Formos. p. 114 (1896); MATSUM., Ind. Pl. Jap. I. p. 328 (1904); COPEL., Polyp. Philipp. p. 47 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 587 (1906); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 349 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929)

Nom. Jap. *Hôbi-kanzu*

Leg. Y. YUDO! Aug. 1907.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines.

Note. I have never collected this species in Yakusima, but Dr. KUDO told me that he had found it in the island. This species is one of the common species in Formosa and the Ryûkyûs, while it is quite rare to find it in northern lands.

Nephrolepis cordifolia, PRESL, Tent. Pt. p. 79 (1836); HOOK. et BAK., Syn. Fil. p. 300 (1868); LUERSS, in Engl. Bot. Jahrb. IV. p. 360 (1883); BAK., in Journ. Bot. XXIII. p. 105 (1885); HENRY, List Pl. Formos. p. 114 (1896); DIELS, in ENGL. u. PRANT, Nat. Pfl.-fam. I. iv. p. 206 (1899); CHR., in Warb. Mons. I. p. 84 (1900); MATSUM., Ind. Pl. Jap. I. p. 328 (1904); COPEL., Polyp. Philipp. p. 46 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 588 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 374 (1911); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 349 (1912); MERR., Enum. Hainan Pl. p. 11 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 80 (1931)

Syn. *Polypodium cordifolium*, LINN., Sp. Pl. ed. 1. p. 1089 (1753)

Aspidium undulatum, AFZ.; SW., in Schrad. Journ. 1800². p. 42 (1801)

Aspidium cordifolium, SW., in Schrad. Journ. 1800². p. 32 (1801)

Aspidium tuberosum, BORY.; WILLD., Sp. Pl. V. p. 234 (1810)

Nephrodium tuberosum, DESV., Prodr. Foug. p. 252 (1827)

Nephrolepis tuberosa, PRESL, Tent. Pt. p. 79 (1836); HOOK., Sp. Fil. IV. p. 151 (1862); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 179 (1867); FR. et SAV. Enum. Pl. Jap. II. p. 243 (1876)

Nom. Jap. *Tamasida*

Leg. Ipse, Miyanoura, Jul. 14, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Philippines, China.

Note. By the roadside, on rocky ground, or in sunny places; grows abundantly; common species in southern Japan.

Humata, CAVANILLES, Descrip. Pl. p. 272 (1802);

DIELS, in ENGL. u. PRANT, Nat. Pfl.-fam. I. iv. p. 208 (1899)

Syn. *Pachypleuria*, PRESL, Epim. Bot. p. 98 (1849)

Pteroneuron, FÉE, Gen. Fil. p. 320 (1850-52)

Humata repens, DIELS, in ENGL. u. PRANT, Nat. Pfl.-fam. I. iv. p. 209 (1899); CHRIST, Geogr. Farn. pp. 194, 202, et 266 (1910); MATH., in Journ. Linn. Soc. XXXIX. p. 370 (1911); MERR., Enum. Hainan Pl. p. 11 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 73 (1931)

Syn. *Adiantum repens*, LINN. f., Supp. p. 446 (1781)

Davallia pedata, SM., Mém. Acad. Turin. V. p. 415 (1793); HOOK., Sp. Fil. I. p. 154 (1846); BAK., in Journ. Bot. p. 103 (1885); MATSUM., Ind. Pl. Jap. I. p. 302 (1904)

Davallia repens, KUHN. Fil. Deck. p. 27 (1867)

Nom. Jap. *Kiku-sinobu*

Leg. Ipse, Kosugidani, Jul. 11. 1928.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China, Malay, Africa.

Note. As an epiphyte in the laurisilvae, at an altitude of about 400 m; rather a rare species in southern Japan.

Davallia, SMITH, Mém. Acad. Turin. V. p. 414

(1793 ; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 212 1899¹)

Syn. *Prosaptia*, PRESL, Tent. Pt. p. 165 1836 p.p.

Stenolobus, PRESL, Tent. Pt. p. 130 1836

Parestia, PRESL, Epim. Bot. p. 99 1849

Scyphularia, F&E, Gen. Fil. p. 324 1850-52

Davallia Mariesii, MOORE, apud BAK., in Ann. Bot. V. no. 18, p. 201 1891 ; NAK., in Tokyo Bot. Mag. XXXIX. p. 120 1925 ; MAK. et NEM., Fl. Jap. ed. 2. p. 41 1931

Syn. *Davallia bulbata*, [non WALL. List n. 258 1828 nom. nud.] HOOK., Sp. Fil. I. p. 169, t. 50. B. 1846 p.p., MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 180 1867 ; FR. et SAV., Enum. Pl. Jap. II. p. 208 1876 ; CHR., Farnk. Erd. p. 301 1897 ; PALIBIN, Consp. Fl. Kor. III. p. 141 1901 ; MATSUM., Ind. Pl. Jap. I. p. 301 1904 ; NAK., Fl. Kor. II. p. 402 1911 ; MATH., in Journ. Linn. Soc. XXXIX. p. 355 1911 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 25 1929

Nom. Jap. *Sinobu*

Leg. Ipse, Jul. 8, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China.

Note. As an epiphyte in forests, at an altitude of about 400 m, rising to 1100 m; rather a common species in Eastern Asia.

Microlepia, PRESL, Tent. Pterid. p. 124 1836 ;

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 215 1875¹ p.p.

Syn. *Scypholepia*, J. SMITH, Hist. Fil. p. 261 1875

Microlepia marginata, C. CHR., Ind. Fil. pp. 212, 427 (1905¹ et 1906¹) ; MATH., in Journ. Linn. Soc. XXXIX. p. 372 1911 ; MORI, Enum. Pl. Cor. p. 14 1922 ; MERR., Enum. Hainan Pl. p. 12 1927 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 78 1931¹)

Syn. *Polypodium marginale*, non LINN. THUNB., Fl. Jap. p. 337 (1784¹)

Polypodium marginatum, HOUTT., Pfl. Syst. XIII. 1. p. 199 1786

Dicksonia Marginalis, SW. in Schrad. Journ. 1800¹. p. 92 1801¹

Davallia scabra, DON, Prodr. Fl. Nep. p. 9 1825

Davallia villosa, WALL., Cat. 244 (1828¹) ; HOOK., Sp. Fil. I. p. 172, t. 48 A (1846¹) ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 180 1867¹

Davallia urophylla, WALL., Cat. n. 2683 1829¹

Microlepia scabra, J. SM., Lond. Journ. Bot. I. p. 427 (1842¹)

Davallia calvescens, HOOK., Sp. Fil. I. p. 172, t. 48 (1846

Microlepia urophylla, MOORE, Ind. Fil. p. 290 (1861¹)

Davallia Sieboldiana, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 180 (1867¹)

Davallia marginalis, BAK., in HOOK. et BAK. Syn. Fil. ed. 1. p. 452 (1868¹), ed. 2. p. 98 (1874) ; FR. et SAV., Enum. Pl. Jap. II. p. 209 (1876)

Microlepia marginalis, HANCE; H. CHR., Farnk. Erd. p. 307, f. 975 (1897), et in WARB, Mons. I. p. 87 (1900); MATSUM., Ind. Pl. Jap. I. p. 314 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 592 (1906)

Nom. Jap. *Huoto-sida*

Leg. Ipse, Jul. 15, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China, India, Ceylon.

Note. As undergrowth at a low altitude, up to 500 m; common in the southern part of Japan.

Microlepia pilosella, MOORE, Ind. Fil. p. 298 (1861); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929); YAMAZUTA, List Manch. Pl. p. 4. (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 78 (1931)

Syn. *Trichomanes hirsutum*, (non LINN.) THUNB., Fl. Jap. p. 339 (1784)

Davallia hirsuta, SW., in Schrad. Journ. 1800^o. p. 87 (1801)

Trichomanes japonicum, (non THUNB.) POIR., Encyc. VIII. p. 79 (1808)

Humata hirsuta, DESV., Prodr. Foug. p. 324 (1827)

Davallia pilosella, HOOK., 2nd. Cent. Fern. t. 96 (1861)

Demstaedtia hirsuta, METT., in Ann. Mus. Bot. Lugd. Bat. III. p. 181 (1867)

Microlepia hirsuta, (non PRESL.) MATSUM., Ind. Pl. Jap. I. p. 313 (1904); NAK., Fl. Kor. II. p. 402 (1911)

Nom. Jap. *Inusida*

Leg. Ipse, Mt. Isizuka, Jul. 10, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria, Philippines.

Note. The fern grows on rocky or sandy, but somewhat sunny places, and is a common species in southern Japan. I have found it in higher places, but it will be found also at low altitudes.

Microlepia strigosa, PRESL, Epim. Bot. p. 95 (1849); BEDD., Fern. South. Ind. p. 85, t. 255 (1863); LUERSS., in Engl. Bot. Jahrb. IV. p. 354 (1883); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 215 (1899); CHR., in WARB. Mons. I. p. 87 (1900); DIELS, in Engl. Bot. Jahrb. XXIX. p. 196 (1900); YABE, in Tokyo Bot. Mag. XVI. p. 49 (1902); MATSUM., Ind. Pl. Jap. I. p. 314 (1904); COPEL., Polyp. Philipp. p. 55 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 592 (1906); NAK., Fl. Kor. II. p. 402 (1911); MERR., Enum. Hainan Pl. p. 12 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 79 (1931)

Syn. *Trichomanes strigosum*, THUNB., Fl. Jap. p. 339 (1784)

Polypodium cristatum, (non LINN.) HOUTT., Pfl. Syst. XIII. 1. p. 208, t. 99, f. 3 (1786)

Dicksonia strigosa, THUNB., in Trans. Linn. Soc. Lond. II. p. 341 (1794)

Dicksonia japonica, SW., in Schrad. Journ. 1800^o. p. 92 (1801)

Davallia strigosa, SW., Adnot. Bot. p. 69 (1829) apud KUNTZE, in Bot. Zeit. p. 542 (1848); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 180 (1867); HOOK. et BAK., Syn. Fil. p. 98 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 210 (1876); HARRINGT., in Journ. Linn. Soc. XVI. p. 27 (1877); BAK., in Journ. Bot. XXIII. p. 103 (1885); HENRY, List Pl. Formos. p. 110 (1896)

Microlepia cristata, J. SMITH, in Journ. Bot. III. p. 416 (1841)

Demstaedtia strigosa, J. SMITH, Hist. Fil. p. 265 (1875)

Nom. Jap. *Isikaguma*

Leg. Ipse, Mugio, Aug. 22, 1930.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, India, Malay.

Note. The fern grows in dry places in forests, and in sunny places at a low altitude.

Odontosoria, FÉE, Gen. Fil. p. 325 (1850-52 ;

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 215 1899

Syn. *Davallia*, sect. *Odontosoria*, PRESL, Tent. Pt. p. 129 (1836

Stenoloma, FÉE, Gen. Fil. p. 330 (1850-52)

Lindsayopsis, KUHN, Die Chaetopterides p. 347 (1882

Odontosoria chusana, (LINN.) MASAM. comb. nov.

Syn. *Adiantum chusanum*, LINN., Sp. Pl. ed. 1. p. 1095 1753

Trichomanes chinensis, LINN., Sp. Pl. ed. 1. p. 1099 1753 ; THUNB., Fl. Jap. p. 340 (1784)

Adiantum chinense, BURM., Fl. Ind. p. 236 (1768)

Davallia chinensis, SM., Mém. Ac. Turin. V. p. 414 (1793)

Microlepia chinensis, METT., Fil. Lip. p. 103 (1856

Odontosoria chinensis, J. SMITH, Bot. Voy. Herald. p. 430 1857 ; MATSUM., Ind. Pl. Jap. I. p. 329 1904. ; NAK., Fl. Kor. II. p. 403 1911 ; MATH., in Journ. Linn. Soc. XXXIX. p. 374 (1911) p.p. ; MERR., Enum. Hainan Pl. p. 12 (1927) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 81 (1931

Davallia tenuifolia, SW. var. *chinensis*, MOORE, Ind. Fil. p. 302 1861 ; MAK., Phan. et Pterid. Jap. VIII. Pl. XXXVII 1900

Lindsaya chinensis, METT. ; KUHN, Fl. Afr. p. 67 1868 ; CHR., Farnk. Erd. p. 296 (1897) p.p.

Stenoloma chinensis, BEDD., Handb. Fern. Brit. Ind. p. 70 1883

Nom. Jap. *Hama-hora-sinobu*

Leg. Ipse, Aug. 20, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The fern grows along sunny roadside, or on the forest edges at a low altitude, and is rather a common species in southern Japan.

var. *tenuifolia*, (MAK) MASAM. comb. nov.

Syn. *Davallia tenuifolia*, SW., in Schrad. Journ. 1800. p. 88 (1801 ; BENTH., Fl. Hongk. p. 462 (1861) ; BEDD., Fern. South Ind. p. 6, t. 16. (1863 ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 180 (1867) ; FR. et SAV., Enum. Pl. Jap. II. p. 210 (1876) ; HARRINGT., in Journ. Linn. Soc. XVI. p. 27 (1877 ; HENRY, List Pl. Formos. p. 110 (1896) ; MAK., Phan. et Pterid. Jap. I. p. 8. Pl. XXXVI. (1900) ; DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 337 (1912) p.p.

Odontosoria chinensis, var. *tenuifolia*, MAK., in Tokyo Bot. Mag. X. p. 152 (1896) ; MATSUM., Ind. Pl. Jap. I. p. 330 (1904) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929) ; NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930) ; MAK. et NEM., Fl. Jap. ed. 2. p. 81 (1931)

Odontosoria chinensis, MATH., in Journ. Linn. Soc. XXXIX. p. 374 (1911) p.p.

Nom. Jap. *Horasinobu*

Leg. Ipse, ca. Kosugidani, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China.

Note. The variety grows in somewhat darker places, such as the edges of forests, by the banks of small streams, etc., rather than in the places where the typ is generally found.

Dennstaedtia, BERNHARDI, in Schrad. Journ.

1800². p. 124 (1801); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 217 (1899)

Syn. *Patania*, PRESL, Tent. Pt. p. 137 (1826)

Sitobium, DESVOUX, Prodr. Forg. p. 262 (1827)

Adectum, LINK, Fil. Sp. pp. 41, 42 (1841)

Sitobium, J. SMITH, in Journ. Bot. III. p. 418 (1841)

Dennstaedtia formosae, CHR., in Bull. Herb. Boiss. 2. sér. IV. p. 617 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 594 (1906); CHR., Ind. Fil. p. 217 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 356 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 42 (1931)

Nom. Jap. *Taiwan-kaguma*

Leg. NAOHARA! Mugio, Jul. 22, 1930.

Distr. Taiwan, China.

Note. It grows in the laurisilvae as undergrowth. The species is not yet found in lands further north than this island.

Dennstaedtia scabra, MOORE, Ind. Fil. p. 307 (1861); MAK., in Tokyo Bot. Mag. IX. p. (246) (1895); H. CHR., Farnk. Erd. p. 312 (1897); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 218 (1899); CHR., in Bull. Herb. Boiss. 2. sér. IV. p. 617 (1904); MATSUM., Ind. Pl. Jap. I. p. 302 (1904); COPEL., Polyp. Philipp. p. 58 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 594 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 356 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 25 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 43 (1931)

Syn. *Dicksonia scabra*, WALL., List n. 2173 (1829); BAK., in Journ. Bot. XXIII. p. 103 (1885); CHR., in Bull. Herb. Boiss. IV. p. 664 (1896)

Dicksonia deltoidea, HOOK., Sp. Fil. I. 80, t. 27 A. 1846¹

Nom. Jap. *Kobano-isikaguma*

Leg. Ipse, 1700 m. Aug. 31, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China, Philippines, India.

Note. The fern grows in the lauri-aciculisilvae about 500-1800 m above the level of the sea, where fallen leaves are plentiful. This is a common species in southern Japan.

Lindsaya, DRYANDER, J. Smith, Mém. Ac.

Turin. V. p. 413 (1793); DYANDER, in Tran. Linn. Soc. III. p. 39 (1797); DIELS in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 219 (1899)

Syn. *Odontoloma*, J. SMITH, in Journ. Bot. III. p. 415 (1841)

Synaphlebium, J. SMITH, in Journ. Bot. III. p. 415 (1841), et in HOOK., Gen. Fil. t. 101 (1842)

Lindsaya cultrata, Sw., Syn. p. 119 (1806); HOOK. et GREV., Ic. Fil. II. t. 144 (1831); HOOK., Sp. Fil. I. p. 203 (1846), et Fil. Exot. t. 67 (1858); METT., Fil. Hort. Bot. p. 104 (1856); BEDD., Fern. South. Ind. p. 7 (1863); HOOK. et BAK., Syn. Fil. p. 105 (1868); BENTH., Fl. Austral. VII. p. 719 (1878); BAK., in Journ. Bot. XXIII. p. 103 (1885); CHR., Farnk. Erd. p. 292 (1897), et in Warb. Mons. I. p. 85 (1900); MAK., in Tokyo Bot. Mag. XII. p. (14) (1898); DIELS, in Engl. Bot. Jahrb. XXIX.

p. 196 (1900); YABE, in Tokyo Bot. Mag. XVI. p. 49 (1902); MATSUM., Ind. Pl. Jap. I. p. 311 (1904); COPEL., Polyp. Philipp. p. 62 (1905); CHR., Ind. Fil. p. 392 (1906); MATSUM. et HAY., Enum. Pl. Formos. p. 595 (1906); NAK., Fl. Kor. II. p. 403 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 371 (1911); DUNN et TUTCH., Fl. Kwangt. and Hong. p. 337 (1912); MERR., Enum. Hainan Pl. p. 13 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 76 (1931)

Syn. *Adiantum cultratum*, WILLD., Phytogr. p. 14, t. 10, f. 2 (1794)

Lindsaya apiculata, KUNZE, Farnk. I. p. 206, t. 85, f. 2 (1846)

Lindsaya Calomelanos, KUNZE, in Bot. Zeit. p. 214 (1848)

Davallia brachypoda, BAK., Syn. Fil. ed. 2. p. 468 (1874)

Nom. Jap. *Hongú-sida*

Leg. Ipse, Kusugawa, Mart. 17, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, India, Australia, Malay, Madagascar.

Note. It grows along rivelets, or in somewhat wet places, or on rocks within the influence of drops of water, from a low altitude up to almost 1000 m, and especially richly in the lauri-aciculisilvae. The species is common in southern Japan.

Lindsaya orbiculata, METT., ex KUHN. in Ann. Mus. Bot. Lugd. Bat. IV. p. 279 (1869); MATSUM., Ind. Pl. Jap. I. p. 312 (1904); C. CHR., Ind. Fil. p. 396 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 371 (1911); MERR., Enum. Hainan Pl. p. 13 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 77 (1931)

Syn. *Adiantum orbiculatum*, LAM., Encyc. I. p. 41 (1783)

Lindsaya flabellulata, DRY., in Trans. Linn. Soc. III. p. 41, t. 8, f. 2 (1797);

HOOK., Sp. Fil. I. p. 211, t. 63, C. (1846); BENTH., Fl. Hongk. p. 445 (1861);

HOOK. et BAK., Syn. Fil. p. 107 (1867); HARRIN., in Journ. Linn. Soc. XVI.

p. 27 (1877); BAK., in Journ. Bot. XXIII. p. 103 (1885); HENRY, List Pl.

Formos. p. 110 (1896); CHR., Farnk. Erd. p. 292 (1897), et in WARB. Mons.

I. p. 85 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 596 (1906)

Adiantum triangulare, POIR., Encyc. Supp. I. p. 140 (1820)

Lindsaya jatanensis, BL., Enum. Pl. Jav. p. 219 (1828)

Davallia trichomanoides, BEDD., Fern. Br. Ind. t. 178 (1866)

Davallia shizophylla, BAK., in HOOK. et BAK. Syn. Fil. ed. 2. p. 468 (1874)

Schizoloma orbiculatum, KUHN, Caetopt. Polyp. p. 346 (1882)

Nom. Jap. *Edauti-hongú-sida*

Leg. Ipse, Kosugidani, Aug. 1, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, India, Ceylon, Malay, North Australia.

Note. This species grows in lower and dryer places than the habitat of the previous species, and seldom on rocks. The species is abundant in the Far East.

Athyrium, ROTH, Rom. Mag. II. 1. p. 105 (1799),
et Tent. Fl. Germ. III. p. 58 (1800); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam.
I. iv. p. 222 (1899)

Syn. *Brachysorus*, PRESL, Epim. Bot. p. 70 (1849)

Hypochlamys, FÉE, Fil. p. 200 (1850-52)

Athyrium cryptogrammoides, HAY., Ic. Pl. Formos. VI. p. 156 (1916); MAK. et NEM.,
Fl. Jap. ed. 2. p. 30 (1931)

Nom. Jap. *Gōkan-tatisinobu*

Leg. Ipse, Kosugidani, Aug. 1, 1928.

Distr. Taiwan.

Note. It is found very rarely in dark places on the humus ground in *Cryptomeria* forests. It is not yet known to be found in lands further north than Yakusima.

Athyrium cystopteroides, EAT., Proc. Amer. Acad. IV. p. 110 (1858); CHR., in Bull. Herb. Boiss. 2. sér. I. p. 1015 (1901)

Syn. *Athyrium cystopteroides*, HOOK., Sp. Fil. III. p. 220 (1860)

Hypodematium cystopteroides, KUHN, Forsch. Gazelle, IV. Farne. p. 8 (1889)

Leg. (fid. Chr.)

Distr. Endemic?

Athyrium Goeringianum, MOORE, Ind. p. 185 (1860); CHR., in Bull. Herb. Boiss. IV. p. 668 (1896); MAK., in Tokyo Bot. Mag. XIII. p. 79 (1899); MATSUM., Ind. Pl. Jap. I. p. 294 (1904); CHR., Ind. Fil. p. 143 (1906); NAK., Fl. Kor. II. p. 405 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 31 (1931)

Nom. Jap. *Hosoba-inuwarabi*

Leg. Ipse, Kosugidani, Jul. 8, 1928.

Distr. Sikoku, Kyûsyû, Korea.

Note. The species flourishes as undergrowth in the forests of *Cryptomeria* and other Conifers and broad-leaved trees. It occurs on rather rare occasion in southern Japan.

Athyrium Nakanoi, MAK., in Tokyo Bot. Mag. XXIII. p. 247 (1909); CHR., Ind. Fil. Supp. I. p. 15 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); NAK., in Tokyo Bot. Mag. XLIII. p. 5 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 32 (1931)

Syn. *Nephrolepis tenuissima*, HAY., Ic. Pl. Formos. IV. p. 202. f. 137 (1914)

Athyrium obtusifolium, ROSENB., in Hedwigia, LVI. p. 335 (1915)

Athyrium tenuissimum, MERR., in Philipp. Journ. Sci. VIII. p. 126 (1918)

Nom. Jap. *Hime-hôbisida*

Leg. Ipse, Kosugidani, Mart. 17, 1923.

Distr. Taiwan, China.

Note. The species has its northern limit in this island. It grows in dark places in *Cryptomeria* forests, about an altitude of 700 m.

Athyrium nipponicum, HANCE, in Journ. Linn. Soc. XIII. p. 92 (1873); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 224 (1899), et in Engl. Bot. Jahrb. XXIX. p. 196 (1900); KOM., Fl. Mansh. I. p. 134 (1901); CHR., in Ind. Fil. p. 144 (1906); NAK., Fl. Kor. II. p. 404 (1911); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 27 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 32 (1931)

Syn. *Asplenium nipponicum*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 240 (1866); HOOK. et BAK., Syn. Fil. p. 227 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 224 (1876)

Nom. Jap. *Inu-warabi*

Leg. Ipse, Jun. 12, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. As undergrowth on the humus soil in the lauri-aciculisilvae, at an altitude of about 700 m; common in southern Japan.

Athyrium reflexipinnum, HAY., Ic. Pl. Formos. IV. p. 234 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 32 (1931)

Nom. Jap. *Sakaba-inuwarabi*

Leg. Ipse, Jul. 25, 1927.

Distr. Taiwan.

Note. It grows in the high portion of the island, namely in the Pseudosasa Owatarii Association, near the timber line where Conifers begin to cease to appear. It is not yet found in lands further north than this island.

Athyrium rigescens, MAK., in Tokyo Bot. Mag. XIII. pp. 27. et '79' 1899; MATSUM., Ind. Pl. Jap. I. p. 296 (1904); CHR., Ind. Fil. p. 145 (1906); NAK., Fl. Kor. II. p. 407 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 350 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 33 (1931)

Syn. *Athyrium oxyphyllum*, 'non MOOR.' MAK., in Tokyo Bot. Mag. X. p. (109. '1896')

Asplenium rigescens, MAK., in Tokyo Bot. Mag. XIII. p. 79 (1899)

Nom. Jap. *Tani-inuwarabi*

Leg. Ipse, Jul. 29, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. As undergrowth in the laurisilvae; rather rare in southern Japan.

Athyrium tozanense, HAY., Ic. Pl. Formos. IV. p. 235 (1914); KODAMA, in MATSUM., Ic. Pl. Koishik. III. no. 5. Pl. 197, p. 103 (1917); CHR., Ind. Fil. Supp. II. p. 8 (1917); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 33 (1911)

Nom. Jap. *Hôrai-inuwarabi*

Leg. Ipse, Jul. 29, 1927.

Distr. Taiwan

Note. In damp and thick forests of laurisilvae and lauri-aciculisilvae at about an altitude of 600 m, ascending to 1000 m. It has its northern limit in this island.

Athyrium Wardii, MAK., in Tokyo Bot. Mag. XIII. pp. 28, '79' 1899; MATSUM., Ind. Pl. Jap. I. p. 296 (1904); CHR., Ind. Fil. p. 147 (1906); CHRIST, in Bull. Acad. Géogr. Bot. XI. p. 246 (1910); MATH., in Journ. Linn. Soc. XXXIX. p. 350 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 34 (1931)

Syn. *Asplenium Wardii*, HOOK., Sp. Fil. III. p. 189 (1860), et 2nd. Cent. Fern. t. XXXIII. (1861)

Nom. Jap. *Hiroha-no-inuwarabi*

Leg. Ipse, Aug. 6, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, China.

Note. It grows in the laurisilvae, from the sea level up to an altitude of about 700 m, and is a common species in southern Japan.

Athyrium yokoscense, (ut *Yocoscense*) CHR., in Bull. Herb. Boiss. IV, p. 668 (1896); YABE, in Tokyo Bot. Mag. XVII. p. 66 (1903), et Enum. Pl. Mansh. p. 1 (1912); CHR., Ind. Fil. p. 147 (1906); KOIDZ., in Tokyo Bot. Mag. XXXVIII. p. 111 (1924); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 26 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 34 (1931)

Syn. *Asplenium yokoscense*, FR. et SAV., Enum. Pl. Jap. II. pp. 225, et 622 (1876)

Athyrium yokoscense, MAK., in Tokyo Bot. Mag. XIII. p. (80 (1899)); MATSUM.,

Ind. Pl. Jap. I. p. 296 (1904); NAK., Fl. Kor. II. p. 403 (1911), et in Tokyo Bot. Mag. XXVIII. p. 82 (1914)

Athyrium flaccidum, H. CHR., in Fedd. Rep. V. p. 11 (1908)

Nom. Jap. *Hébi-no-negoza*

Leg. Ipse, Aug. 23, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Korea, Manchuria.

Note. The fern is found in warm sunny places in the laurisilvae, and is common in southern Japan.

Diplazium, SWARTZ, in Schrad. Journ. 1800², p.

61 (1801); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 224 (1899) p.p.

Syn. *Callipteris*, BORY, Voy. I. p. 282 (1834)

Anisogonium, PRESL, Tent. Pt. p. 115 (1836)

Oxygonium, PRESL, Tent. Pt. p. 117 (1836)

Microstegia, PRESL, Epim. Bot. p. 90 (1849)

Ochlogramma, PRESL, Epim. Bot. p. 93 (1849)

Diplazium arisanense, HAY., Ic. Pl. Formos. IV. p. 212 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 43 (1931)

Nom. Jap. *Arisan-uarabi*

Leg. A. KIMURA! Aug. 7, 1922.

Distr. Taiwan.

Note. It grows as undergrowth in the lauri-aciculisilvae, and has its northern limit in this island.

Diplazium Conilii, MAK., in Tokyo Bot. Mag. XXVII. p. 253 (1913; CHR., Ind. Fil. Supp. II. p. 12 (1917; MASAMUNE, Prel. Rep. Veg. Yak. p. 25 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 44 (1931)

Syn. *Asplenium Conilii*, FR. et SAV., Enum. Pl. Jap. II. p. 227 (1876)

Diplazium Oldhami, H. CHR., in Bull. Herb. Boiss. VII. p. 819 (1899); MATSUM., Ind. Pl. Jap. I. p. 304 (1904; NAK., Fl. Kor. II. p. 409 (1911), et in Tokyo Bot. Mag. XXVIII. p. 85 (1914); MIY. et KUDO, Fl. Kokk. and Sagh. I. p. 32 (1930)

Diplazium japonicum, var. *Conilii*, MAK., in Tokyo Bot. Mag. XX. p. 32 (1903)

Nom. Jap. *Hosoda-sikesida*

Leg. Ipse, Jul. 25, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea.

Note. The fern thickly grows as undergrowth in the Cryptomeria forests, at an altitude of about 700 m and is common in Eastern Asia.

Diplazium costalisorum, HAY., Ic. Pl. Formos. IV. p. 213 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 44 (1931)

Nom. Jap. *Nankoku-sida*

Leg. A. KIMURA! Aug. 9, 1922.

Distr. Taiwan.

Note. It flourishes on rich humus soil in Cryptomeria forests, at an altitude of about 700 m, and has its northern limit of habitat in this island.

Diplazium Fauriei, CHR., in Bull. Herb. Boiss. 2. sér. I. p. 1015 (1901); MAK. et NEM., Fl. Jap. ed. 1. p. 1602 (1925), et ed. 2. p. 45 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 25 (1929)

Nom. Jap. *Hosoba-nokogiri-sida*

Leg. Ipse, Mart. 20, 1923.

Distr. Amami-Ōsima.

Note. It grows on some rocky places in the laurisilvae about 500 m above the sea level.

Diplazium fraxinifolium, PRESL, Rel. Haenk. I. p. 49 (1825; MAK. et NEM., Fl. Jap. ed. 1. p. 1602 (1925), et ed. 2. p. 45 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 25 (1929)

Syn. *Diplazium luzoniense*, SPRENG., Syst. Veg. IV. p. 68 (1827)

Asplenium fraxinifolium, WALL., List no. 194 (1829; HOOK., 2nd. Cent. Fern. t. 19 (1861)

Diplazium bantamense, BL., Enum. Pl. Jav. p. 191 (1828; CHRIST, Farnk. Erd. p. 216 (1897; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 226 (1899); MATSUM., Ind. Pl. Jap. I. p. 302 (1904; COPEL., Polyp. Philipp. p. 72 (1905; MATSUM. et HAY., Enum. Pl. Formos. p. 597 (1906); CHR., Ind. Fil. p. 228 (1906)

Anisogonium fraxinifolium, PRESL, Tent. Pt. p. 116, t. 4. f. 18 (1836

Callipteris elegans, J. SM., in Journ. Bot. III. p. 409 (1841

Oxygonium elegans, J. SM., in Journ. Bot. IV. p. 178 (1841)

Anisogonium elegans, PRESL, Epim. Bot. p. 93 (1849

Anisogonium grossum, PRESL, Epim. Bot. p. 93 (1849

Callipteris fraxinifolia, J. SM., in MOOR. Ind. Fil. p. 217 (1861

Anisogonium lineolatum, BEDD., Ferns Br. Ind. t. 330 (1869)

Athyrium fraxinifolium, MILDE, in Bot. Zeit. p. 353 (1870

Asplenium batamense, BAK., in Journ. Bot. XXIII. p. 104 (1885; HENRY, List Pl. Formos. p. 112 (1896

Nom. Jap. *Kinobori-sida*

Leg. A. KIMURA! Aug. 13, 1922.

Distr. Amami-Ōsima, Okinawa, Taiwan, China, Philippines, India.

Note. The plant grows in abundance along the edges of forests or by the roadside, especially thickly in places where the laurigneous trees have been cleared, from about 100 m to 400 m above the sea level. This is a common species in southern Japan, but it is not known in lands further north than this island.

Diplazium Hookerianum, KOIDZ., in Tokyo Bot. Mag. XXXVIII. p. 105 (1924; MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 45 (1931)

Syn. *Gymnogramme decurrenti-alatum*, HOOK., Sp. Fil. V. p. 142, t. 294 (1865; FR. et SAV., Enum. Pl. Jap. II. p. 248 (1876)

Phegopteris decurrenti-alatum, CHR., Farnk. Erd. p. 274 (1897)

Nephrodium decurrenti-alatum, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 171 (1899; MATSUM., Ind. Pl. Jap. I. p. 316 (1904

Dryopteris decurrenti-alatum, C. CHR., Ind. Fil. p. 261 (1906

Athyrium decurrenti-alatum, COPEL., in Philipp. Journ. Sc. III. p. 279 (1909)

Nom. Jap. *Siketisida*

Leg. Ipse, Kosugidani, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Taiwan.

Note. Grows as undergrowth in somewhat wet places in the lauri-aciculisilvae, especially thickly in the Conifer forest, at about an altitude of 700 m.

Diplazium isobasis, CHR., in Bull. Herb. Boiss. 2. sér. IV. p. 618 (1904); CHR., Ind. Fil. p. 234 (1906); HAY., Ic. Pl. Formos. IV. p. 214 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 45 (1931)

Nom. Jap. *Morozokosida*

Leg. Ipse, Jul. 21, 1924.

Distr. Taiwan.

Note. I found this interesting fern as undergrowth in the mixed forests of Conifers and evergreen broad-leaved trees, about 700 m above the sea level. This species has its northern limit in this island.

Diplazium japonicum, BEDD., Fer. Br. Ind. Supp. p. 12 (1876), et Handb. Fern. Brit. Ind. p. 180 (1883); CHRIST, Farnk. Erd. p. 218 (1897); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 226 (1899); CHRIST, in WARB. Mons. I. p. 74 (1900); YABE, in Tokyo Bot. Mag. XVI. p. 49 (1902); MATSUM., Ind. Pl. Jap. I. p. 303 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 598 (1906); NAK., Fl. Kor. II. p. 409 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 357 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 46 (1931)

Syn. *Asplenium japonicum*, THUNB., Fl. Jap. p. 334 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 176 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 227 (1876); BAK., in Journ. Bot. XXIII. p. 105 (1885); HENRY, List Pl. Formos. p. 112 (1896)

Asplenium Schkuhrii, (non METT.) HOOK., Sp. Fil. III. p. 251 (1860)

Nom. Jap. *Sikesida*

Leg. Ipse, Jul. 7, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, India.

Note. It ranges from the sea level up to an altitude of about 1000 m. As its Japanese name indicates, it grows in wet places.

Diplazium lanceum, PRESL, Tent. Pt. p. 113 (1836); A. GRAY, Pl. Jap. p. 329 (1859); BEDD., Handb. Fern. Brit. Ind. p. 174 (1883); CHR., Farnk. Erd. p. 215 (1897); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 225 (1899); CHR., in WARB. Mons. I. p. 74 (1900); YABE, in Tokyo Bot. Mag. XVI. p. 49 (1902); MATSUM., Ind. Pl. Jap. I. p. 303 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 599 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 357 (1911); MORI, Enum. Pl. Cor. p. 8 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 46 (1931)

Syn. *Asplenium lanceum*, THUNB., Fl. Jap. p. 333 (1784); KUNZE, Pterid. Jap. p. 526 (1848); METT., in Miq. Ann. Mus. Bot. Lugd. Bat. II. p. 236 (1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 175 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 226 (1876); HOOK. et BAK., Syn. Fil. p. 229 (1867); HARRINGT., in Journ. Linn. Soc. XVI. p. 29 (1878); LUERSS., in Engl. Bot. Jahrb. IV. p. 357 (1883); BAK., in Journ. Bot. XXIII. p. 104 (1885); HENRY, List Pl. Formos. p. 112 (1896)

Scolopendrium dubium, DON, Prodr. Fl. Nep. p. 9 (1825)

Asplenium subsinuatum, WALL. ex HOOK. et GREV., Ic. Fil. t. 27 (1827)

Athyrium lanceum, MILDE, in Bot. Zeit. p. 354 (1870)

Micropodium lanceum, J. SMITH, Hist. Fil. p. 323 (1875)

Nom. Jap. *Herasida*

Leg. Ipse, Jul. 17, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, India.

Note. Grows in the laurisilvae from a low altitude up to about 700 m; very often on mountain passes; rather common in southern Japan.

Diplazium lutchuense, KOIDZ., in Tokyo Bot. Mag. XXXVIII. p. 106 (1924); MA-SAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 47 (1931)

Nom. Jap. *Yakusima-kuziyaku*

Note. I have never collected this plant in the island but Dr. KOIDZUMI reported that it grows in the island.

Distr. Endemic plant.

Diplazium maximum, DON C. CHR., Ind. Fil. p. 235 (1905; MATH., in Journ. Linn. Soc. XXXIX. p. 358 1911; MAK. et MEM., Fl. Jap. ed. 2. p. 47 (1931)

Syn. *Asplenium maximum*, DON, Prodr. Fl. Nep. p. 8 (1825); HOOK. et BAK., Syn. Fil. p. 239 (1867; BAK., in Journ. Bot. p. 200 (1875)

Asplenium latifolium, (non CAV.) DON, Prodr. Fl. Nep. p. 8 (1825); METT., in Miq. Ann. Mus. Bot. Lugd. Bat. II. p. 239 (1866); HOOK. et BAK., Syn. Fil. p. 239 (1867; HARRING., in Journ. Linn. Soc. XVI. p. 29 (1877; LUERSS., in Engl. Bot. Jahrb. IV. p. 357 (1883)

Diplazium dilatatum, BL., Enum. Pl. Jav. p. 194 (1828)

Microstegia dilatata, PRESL, Epim. Bot. p. 91 (1849)

Diplazium latifolium, MOORE, Ind. Fil. p. 141 (1859; CHRIST, Farnk. Erd. p. 220 (1897, et in WARB. Mons. I. p. 74 (1900; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 226 (1899, et in Engl. Bot. Jahrb. XXIX. p. 197 (1900; MATSUM., Ind. Pl. Jap. I. p. 304 (1904; COPEL., Polyp. Philipp. p. 75 (1905; MATSUM. et HAY., Enum. Pl. Formos. p. 599 (1906; MATH., in Journ. Linn. Soc. XXXIX. p. 357 (1911; MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929)

Asplenium dilatatum, HOOK., Sp. Fil. III. p. 258 (1860)

Asplenium sororium, METT., in Ann. Sc. Nat. IV. 15. p. 73 (1861)

Athyrium latifolium, MILDE, in Bot. Zeit. p. 354 (1870)

Athyrium dilatatum, MILDE, in Bot. Zeit. p. 353 (1870)

Diplazium sororium, CARR., in Seem. Fl. Vit. p. 356 (1873)

Gymnogramme gigantea, BAK., in Journ. Bot. p. 177 (1889)

Nephrodium giganteum, DIELS, in Engl. Bot. Jahrb. XXIX. p. 189 (1900)

Nom. Jap. *Hiroha-nokogirisida*

Leg. Ipse, Jul. 15, 1922.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Polynesia, Malay, Philippines, Australia.

Note. The plant grows as undergrowth in the forests from a low altitude up to about 500 m. In some places, for example, near Ambô, the fern is so predominant in the laurisilvae that a considerable area of forest bed is entirely covered with it. I have not yet found the species in lands further north than Tanegasima.

Diplazium Mettenianum, C. CHR., Ind. Fil. p. 236 (1905)

Syn. *Asplenium Mettenianum*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 174 (1867)

Asplenium Textori, MIQ., Cat. Mus. Bot. Lugd. Bat. p. 126 (1870)

Diplazium Textori, (MIQ.) MAK., in Tokyo Bot. Mag. XIII. p. 31 (1899); MA-

SAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 49 (1931)

Nom. Jap. *Miyama-nokogiri-sida*

Leg. Ipse, Mart. 20, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. Grows on rocky ground, or in wet places, as undergrowth, in the lauri-aciculisilvae at an altitude of about 500 m; rather a common species in southern Japan.

Diplazium Morii, HAY., Mat. Fl. Formos. p. 437 (1911)

Syn. *Asplenium Doederleinii*, LUERSS., in Engl. Bot. Jahrb. IV. p. 358 (1883)

Diplazium Doederleinii, (non MAK.) KODAMA, in MATSUM. Ic. Pl. Koishik. I. n. 5. p. 139, t. 70 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 44 (1931)

Nom. Jap. *Sima-siroyamasida*

Leg. Ipse, Kosugidani, Jul. 26, 1927.

Distr. Amami-Ôsima, Okinawa, Taiwan.

Note. The plant flourishes as undergrowth occupying a large area in the laurisilvae, and is widely distributed in southern Japan. It is not found in lands further north of this island.

Diplazium simplicifolium, KODAMA, in MATSUM. Ic. Pl. Koishik. I. 5. p. 135. Pl. 68 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 48 (1931)

Nom. Jap. *Hiroha-herasida*

Leg. Ipse, Jul. 15, 1922.

Distr. Honsyû.

Note. The plant grows as undergrowth in the laurisilvae.

Diplazium subrigescens, HAY., Ic. Pl. Formos. IV. p. 219 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 49 (1931)

Nom. Jap. *Hôrai-inuwarabi*

Leg. Ipse, Aug. 1, 1924.

Distr. Taiwan.

Note. The species has its northern limit in this island. It grows as undergrowth on humus soil in the lauri-aciculisilvae, at an altitude of about 700 m.

Diplazium Taquetii, C. CHR., in Bull. Géogr. Bot. Mans. p. 69 (1911); MORI, Enum. Pl. Cor. p. 8 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 49 (1931)

Syn. *Diplazium Doederleinii*, (non LUERSS.) MAK., in Tokyo Bot. Mag. XIII. p. 15, (1899)

Asplenium Doederleinii, (non LUERSS.) MATSUM., Ind. Pl. Jap. I. p. 289 (1904) p.p.

Nom. Jap. *Siroyama-sida*

Leg. Ipse, Jul. 30, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The species is found on humus ground in the laurisilvae or in the lauri-aciculisilvae from the sea level up to an altitude of about 700 m. It is common in southern Japan.

Diplazium Tomitaroanum, MASAMUNE, in Journ. Soc. Trop. Agr. II. p. 33 (1930)

Syn. *Diplazium lancèum*, PRESL, var. *sinuato-lobatum*, MAK., in Tokyo Bot. Mag. XX. p. 32 (1906) p.p.

Diplazium lanceum, PRESL, var. *crenatum*, MAK., in Tokyo Bot. Mag. XXVII. p. 253 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 46 (1931)

Nom. Jap. *Nokogiri-herasida*

Leg. Ipse, Kusugawa, Aug. 5, 1924.

Distr. Honsyû, Sikoku, Okinawa, Taiwan.

Note. The plant grows in the lauri-aciculisilvae from 500 m to 700 m above the sea level and is rare in the southern part of Japan.

Diplazium virescens, O. KUNTZE, in Bot. Zeit. VI. p. 537 (1848); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 226 1899; MATSUM., Ind. Pl. Jap. I. p. 304 (1904); NAK., Fl. Kor. II. p. 409 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 251 (1930); MATH., in Journ. Linn. Soc. XXXIX. p. 358 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 49 (1931)

Syn. *Asplenium virescens*, METT., Aspl. p. 191, n. 227 1859, et in Ann. Mus. Bot. Lugd. Bat. II. p. 239 1866; KUNZE, in Bot. Zeit. IV. p. 537 (Pterid. Jap.) (1848); HOOK., Sp. Fil. III. p. 260 (1860)

Nom. Jap. *Kokumô-kuzuyu*

Distr. Amami-Ôsima, Bonins, Korea, China.

Note. I have never collected this plant in the island but it is reported to be indigenous to this island. It may occur on rare occasion.

Diplazium Wichurae, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 226 (1899), et in Engl. Bot. Jahrb. XXIX. p. 197 1900; MATSUM., Ind. Pl. Jap. I. p. 305 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 600 1906; NAK., Fl. Kor. II. p. 409 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 358 1911; MASAMUNE, Prel. Rep. Veg. Yak. p. 26 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 49 1931

Syn. *Asplenium Wichurae*, METT., in Ann. Mus. Bot. Lugd. Bat. II. p. 237 (1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 175 1867; LUERSS., in Engl. Bot. Jahrb. IV. p. 357 (1883); BAK., in Journ. Bot. XXIII. p. 105 (1885); MAK., in Tokyo Bot. Mag. IX. p. 245 (1895)

Nom. Jap. *Nokogirisida*

Leg. FAURIE, Jul. 1900.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China.

Note. Species common in southern Japan.

Asplenium, LINN., Sp. Pl. ed. 1. p. 1078 (1753);

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 233 1899 p.p.

Syn. *Caenopteris*, BERGIUS, Act. Acad. Petrop. 1782². p. 249 (1786)

Darea, JUSS., Gen. Pl. p. 15 (1789); SMITH, Ném. Acad. Turin. V. p. 409 (1793)

Phyllistis, MOENCH, Method. Pl. p. 724 (1794)

Tarachia, PRESL, Epim. Bot. p. 74 (1849)

Thamnopteris, PRESL, Epim. Bot. p. 68 (1849)

Loxoscapha, MOORE, in Journ. Bot. V. p. 227 (1853)

Asplenidictyum, J. SM., in HOOK. Ic. Pl. t. 937 (1854), et Hist. Fil. p. 333 (1875)

Micropodium, METT., in Ann. Mus. Bot. Lugd. Bat. II. p. 232 1866 p.p.

Asplenium abbreviatum, MAK., in Tokyo Bot. Mag. XIII. p. 12 (1899); MATSUM., Ind. Pl. Jap. I. p. 289 (1904); CHR., Ind. Fil. p. 98 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 23 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 23 (1931)

Syn. *Asplenium Savelii*, MORI Enum. Pl. Cor. p. 3 (1922)

Nom. Jap. *Tokiwa-toranô*

Leg. Ipse, ca. Miyanoura.

Distr. Honsyû, Sikoku, Korea.

Note. The species is found along stone walls, or on rocky places, or in villages. The species is common in the Japanese territory.

Asplenium achilleifolium, (LAM.) C. CHR., Ind. Fil. p. 99 (1905); MATH., in Journ. Linn. Soc. XXXIX. p. 344 (1911); MORI, Enum. Pl. Cor. p. 3 (1922); MERR., Enum. Hainan Pl. p. 14 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 23 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 23 (1931)

Syn. *Adiantum achilleae-folium*, LAM., Encyc. I. p. 43 (1783)

Adiantum borbonicum, JACQ., Coll. Bot. III. p. 286, t. 21. f. 1 (1799)

Darea rutaefolia, WILLD., Sp. Pl. V. p. 298 (1810)

Darea obtusa, DESV., Berl. Mag. V. p. 323 (1811)

Darea stans, BORY, Bél. Voy. Bot. II. p. 53 (1833)

Asplenium rutaefolium, KUNZE, in Linn. X. p. 521 (1836); FR. et SAV., Enum. Pl. Jap. II. p. 222 (1876); CHR., in Farnk. Erd. p. 208 (1897); MAK., Phan. et Pterid. Jap. Ic. III. Pl. LXV. (1900); MATSUM., Ind. Pl. Jap. I. p. 291 (1904)

Asplenium prolongatum, HOOK., 2nd. Cent. Fer. t. 42 (1861); METT., Fil. Trian. Planc. in Ann. Sc. Nat. II. p. 234 (1865); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 173 (1867); LUERSS., in Engl. Bot. Jahrb. IV. p. 357 (1883)

Nom. Jap. *Hinoki-sida*

Leg. Ipse, ca. Onoaida, Aug. 8, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China, India.

Note. Grows as an epiphyte on the surface of rocks, or as undergrowth in broad-leaved tree forests; rare in southern Japan.

Asplenium cheilosorum, KUNZE, in Mett. Aspl. n. 104, t. 5, ff. 12-13 (1859); CHR., Ind. Fil. p. 105 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 344 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 23 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 24 (1931)

Syn. *Asplenium heterocarpum*, WALL., List n. 218 (1828 nom nud.); HOOK. et BAK., Syn. Fil. p. 210 (1867); CHR., Farnk. Erd. p. 194 (1897), et in WARB. Mons. I. p. 71 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 603 (1906)

Nom. Jap. *Usuba-kuziyaku*

Leg. Ipse, Kosugidani.

Distr. Taiwan, China, India, Ceylon.

Note. The fern grows along rivulets or on rocks moistened by drops of water-springs in the mountains. The northern limit of habitat of this species is in this island.

Asplenium incisum, THUNB., Trans. Linn. Soc. II. p. 342 (1794); KUNZE, G., Pterid. Jap. p. 523 (1848); HOOK. et BAK., Syn. Fil. p. 217 (1867); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 173 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 221 (1876); CHR., Farnk. Erd. p. 203 (1897); KOM., Fl. Mansh. I. p. 139 (1901); MATSUM., Ind. Pl. Jap. I. p. 290 (1904); CHR., Ind. Fil. p. 116 (1906); NAK., Fl. Kor. II. p. 407 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 345 (1911); HULT., Fl. Kamtch. I. p. 42 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 23 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 33 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 24 (1931)

Syn. *Asplenium trichomanes*, (non L.INN.) THUNB., Fl. Jap. p. 334 (1784)

Athyrium fontanum, A. GRAY, Bot. Jap. p. 421 (1859)

Asplenium elegantulum, HOOK., Sp. Fil. III. p. 190 (1860)

Nom. Jap. *Toranoosida*

Leg. KUDO, Aug. 1906.

Distr. Kamchatka, Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. The fern is found at a low altitude near cultivated land or houses, or on stone walls. The species has its southern limit in this island.

Asplenium lunulatum, SW., in Schrad. Journ. 1800². p. 52 (1801); SALOMON, Nomencl. Gefassk. p. 92 (1883); CHR., Farnk. Erd. p. 193 (1897); MATSUM., Ind. Pl. Jap. I. p. 290 (1904); CHR., Ind. Fil. p. 119 (1906); MAK. et NEM., Fl. Jap. ed. 1. p. 1581 (1925), et ed. 2. p. 25 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929)

Nom. Jap.

Leg. ? fid MAKINO et NEMOTO.

Distr. Africa.

Note. I have never found this species in the island, but the species is said to be indigenous to this island.

Asplenium Nakanoanum, MAK., in Tokyo Bot. Mag. XXVIII. p. 176 (1914); CHR., Ind. Fil. Supp. II. p. 6 (1917); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 25 (1931)

Nom. Jap. *Husaszaziran*

Leg. Ipse, ca. Mugio, Jul. 24, 1928.

Distr. Taiwan.

Note. The species grows as undergrowth in the laurisilvae and in the lauri-aculisilvae, sometimes on the surface of mossy rocks. The species is restricted to this island and Taiwan.

Asplenium normale, DON, Prodr. Fl. Nep. p. 7 (1825); FR. et SAV., Enum. Pl. Jap. II. p. 219 (1876); BEDD., Handb. Fern. Brit. Ind. p. 144 (1883); BAK., in Journ. Bot. XXIII. p. 104 (1885); DIELS, Fl. Cent. Chin. p. 198 (1900); MATSUM., Ind. Pl. Jap. I. p. 291 (1904); CHR., Ind. Fil. p. 123 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 346 (1911); MERR., Enum. Hainan Pl. p. 14 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 26 (1931)

Syn. *Asplenium opacum*, KUNZE, in Linn. XXIV. p. 261 (1851)

Asplenium multijugum, WALL., Cat. n. 207 (1828); HOOK., Sp. Fil. III. p. 139 (1860)

Asplenium pavonicum, BRACK., Expl. Exp. XVI. p. 150, t. 20, f. 1 (1854)

Nom. Jap. *Nuri-toranô*

Leg. Ipse, Aug. 1, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan.

Note. The plant grows in the laurisilvae and in the lauri-aculisilvae as undergrowth, sometimes on rocky ground or on mossy rocks, and it is common in the Far East.

Asplenium oligophlebium, BAK., in Gard. Chron. n. s. XIV. p. 494 (1880); MATSUM., Ind. Pl. Jap. I. p. 291 (1904); CHR., Ind. Fil. p. 124 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 26 (1931)

Nom. Jap. *Tyasensida*

Leg. Ipse, Kosugidani, Sept. 2, 1926.

Distr. Honsyû, Amami-Ôsima, Okinawa.

Note. The fern grows on rocks or on rocky ground in the laurisilvae and in the lauri-aculisilvae. The species is rather rare in the above mentioned regions.

Asplenium Sarellii, HOOK., in Blackiston Yang-tsze. pp. 363, 364 (1862); NAK., Fl. Kor. II. p. 408 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 347 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 26 (1931)

Syn. *Asplenium Blakistoni*, BAK., in HOOK. et BAK. Syn. Fil. ed. 1. p. 216 (1867)

Asplenium pekinense, HANCE, in Journ. Bot. p. 262 (1867); MAK., in Tokyo Bot. Mag. IX. p. (245) (1895), c. XII. p. (87) (1898); MATH., in Journ. Linn. Soc. XXXIX. p. 346 (1911)

Asplenium Saulii, BAK., in HOOK. et BAK. Syn. Fil. ed. 2. p. 216 (1874); CHR., Farnk. Erd. p. 203 (1897); KOM., Fl. Maush. I. p. 139 (1901); MATSUM., Ind. Pl. Jap. I. p. 292 (1904); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929)

Nom. Jap. *Kobano-hinoki-sida*

Leg. Ipse, Jun. 7, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria, China, Himalaya.

Note. The fern grows on rocks in the laurisilvae, at altitudes between 200-400 m and is rather rare in southern Japan.

Asplenium Wilfordii, METT.; KUHN, in Linn. XXXVI. p. 94 (1869); BAK., in HOOK. et BAK. Syn. Fil. ed. 2. p. 487 (1874); FR. et SAV., Enum. Pl. Jap. II. p. 220 (1876); LUERSS., in Engl. Bot. Jahrb. IV. p. 356 (1883); MAK., in Tokyo Bot. Mag. XII. p. (87) (1898); MATSUM., Ind. Pl. Jap. I. p. 293 (1904); CHR., Ind. Fil. p. 138 (1906); NAK., Fl. Kor. II. p. 408 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 347 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 28 (1931)

Nom. Jap. *Aoganesida*

Leg. Ipse, Nagata, Mart. 22, 1923.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species grows in the lauri-aculisilvae, and occurs rarely in Japan.

Asplenium Wrightii, EAT.; HOOK., Sp. Fil. III. p. 113, t. 182 (1860); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 175 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 219 (1876); MATSUM. et HAY., Enum. Pl. Formos. p. 607 (1906); COPEL., in Philipp. Journ. Sc. III. 5. p. 280 (1908); NAK., Fl. Kor. II. p. 407 (1911); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 343 (1912); MERR., Enum. Hainan Pl. p. 15 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 24 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 29 (1931)

Nom. Jap. *Kuruma-sida*

Leg. Ipse, Aug. 7, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China, Philippines.

Note. Grows on some damp spots, such as, near springs or along brooks in the laurisilvae; rather rare in South Kyûsyû, Sikoku, and Honsyû.

Asplenium yakumontanum, MASAMUNE, sp. nov.

Rhizoma electum ca. 3 cm longum. Frondes ab apice rhizomatis evoluti 10-25 cm longi. Stipes frondorum 5-10 cm longi, squamis castaneis dense vestiti superiore sparsim et teniore squamati. Lamina frondorum pinnata ambitu ovata vel lanceolato-oblonga 6-17 cm. longa 4-7 cm. lata, supra viridis infra vix pallida. Pinnae oblique lanceolatae vel ovatae crenulatae vel pinnatisectae oppositae vel suboppositae, margine vix aculeato-serratis, nervulis lateralibus furcatis. Sori sub lobulis pinnearum singuli oblongi 2 mm longi.

Nom. Jap. *Yakusima-sida*

Leg. Ipse, Jul. 16, 1928.

Note. Species endemic to this island; grows as undergrowth in the laurisilvae, but is rarely found.

Asplenium Yoshinagae, MAK., Phan. et Pterid. Jap. Ic. I. 2. p. 1. t. 64 (1900); MAK. et NEM., Fl. Jap. ed. 2. p. 29 (1931)

Nom. Jap. *Tokuasida*

Leg. Ipse, Kosugidani, Jul. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima.

Note. This species grows as an epiphyte on rocks in the lauri-aciculisilvae.

Neottopteris, J. SMITH, in Journ. Bot. III. p. 409

(1841), et IV. p. 175 (1841)

Syn. *Asplenium* LINN.; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 233 (1899) p.p.

Neottopteris Nidus, J. SMITH, in HOOK. Gen. Fil. t. 113. B. (1842), et Ferns. Brit. and Foreign, p. 226 (1896); HAY., in Tokyo Bot. Mag. XLI. p. (711) (1921); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930)

Syn. *Asplenium Nidus*, LINN., Sp. Pl. ed. 1. p. 1079 (1753); HOOK., in Bot. Mag. t. 310 (1831); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 74 (1832), p. 256 (1836), et p. 312 (1840); HOOK., Sp. Fil. III. p. 77 (1860); BLANCO, Fl. Filip. t. 36 (1878-80); BENTH., Fl. Hongk. p. 450 (1861), et Fl. Austral. VII. p. 744 (1878); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 173 (1867); HOOK. et BAK., Syn. Fil. p. 190 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 218 (1876); BAK., in Journ. Bot. XXIII. p. 104 (1885); LUERSS., in Engl. Bot. Jahrb. IV. p. 355 (1883); HENRY, List Pl. Formos. p. 112 (1896); CHR., Farnk. Erd. p. 188 (1897), in WARB. Mons. I. p. 71 (1900), et Geogr. Farn. p. 83 (1910); YABE, in Tokyo Bot. Mag. XVI. p. 49 (1902); MATSUM., Ind. Pl. Jap. I. p. 291 (1904); COPEL., Polyp. Philipp. p. 78 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 605 (1906); ROSENB., Malayan Ferns, p. 439 (1908); MATH., in Journ. Linn. Soc. XXXIX. p. 346 (1911); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 343 (1912); MERR., Enum. Hainan Pl. p. 14 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 26 (1931)

Nom. Jap. *Ô-taniwatari*

Leg. Ipse, Jul. 15, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Bonins, Taiwan, Philippines, China, Malay, Polynesia, Australia, East-Africa.

Note. Grows as an epiphyte on the laurigneous trees, from a low altitude up to about 700 m and is a common species in tropical and subtropical lands.

Hymenoasplenium, HAY., in Tokyo Bot. Mag. XLI. p. (712) (1927)

Hymenoasplenium unilaterale, HAY., in Tokyo Bot. Mag. XLI. p. (712) (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929)

Syn. *Asplenium unilaterale*, LAM., Encyc. II. p. 305 (1786); HENRY, List Pl. Formos. p. 112 (1896); YABE, in Tokyo Bot. Mag. XVI. p. 50 (1902); MATSUM., Ind. Pl. Jap. I. p. 292 (1904); MATH., in Journ. Linn. Soc. XXXIX. p. 347 (1911); HAY., Ic. Pl. Formos. VIII. p. 142 (1919); MORI, Enum. Pl. Cor. p. 4 (1922); MERR., Enum. Hainan Pl. p. 14 (1927); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 251 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 27 (1931)

Asplenium resectum, SMITH, Ic. Ined. III. t. 72 (1791); HOOK. et GREV., Ic. Fil. t. 114 (1828); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 106 (1832); HOOK., Sp. Fil. III. p. 130 (1830); BEDD., Fern. South. Ind. p. 45, t. 132 (1863); HOOK. et BAK., Syn. Fil. p. 210 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 219 (1876); HARRINGT., in Journ. Linn. Soc. XVI. p. 29 (1877); BAK., in Journ. Bot. XXIII. p. 104 (1885); CHR., Farnk. Erd. p. 194 (1897); DIELS, in Engl. Bot. Jahrb. XXIX. p. 198 (1900); COPEL., Polyp. Philipp. p. 81 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 605 (1906)

Nom. Jap. *Hôbisida*

Leg. Ipse, ca. Miyanoura, Jul. 25, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines, Hawaii, Africa, India, Ceylon.

Note. It very often grows in wet places, and is common in South Japan.

var. *obliquissimum*, HAY.; SASAKI, List Pl. Formos. p. 26 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929)

Syn. *Asplenium unilaterale*, LAM. var. *obliquissimum*, HAY., Ic. Pl. Formos. IV. p. 230, f. 160 A-B (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 28 (1931)

Nom. Jap. *Taiwan-himehôbisida*

Leg. Ipse, Kosugidani, Mart. 19, 1923.

Distr. Taiwan.

Note. The variety is not yet found in lands further north than this island. It grows nearly under the same conditions as the type species.

Blechnum, LINN., Sp. Pl. ed. 1. p. 1077 (1753);

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 245 (1899) partim.

Syn. *Salpichlaena*, J. SMITH, in HOOK. Gen. Fil. t. 93 (1842)

Blechnopsis, PRESL, Epim. Bot. p. 115 (1849)

Blechnum orientale, LINN., Sp. Pl. ed. 1. p. 1077 (1753), et ed. 2. p. 1535 (1763); HOOK. et ARNOT., Bot. Cap. Beech. Voy. p. 75 (1832) et p. 257 (1836); HOOK., Sp. Fil. III. p. 52 (1860); HARRINGT., in Journ. Linn. Soc. XVI. p. 28 (1877); LUERSS., in Engl. Bot. Jahrb. IV. p. 355 (1883); MAK., in Tokyo Bot. Mag. IX. p. 9 (1895); HENRY, List Pl. Formos. p. 111 (1896); CHR., Farnk. Erd. p. 182 (1897), et in WARB. Mons. I. p. 65 (1900); MATSUM., Ind. Pl. Jap. I. p. 297 (1904); COPEL., Polyp. Philipp. p. 89 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 608 (1906); ROSENB., Malayan Ferns, p. 387 (1908); MATH., in Journ. Linn. Soc. XXXIX. p. 351 (1911); MERR., Enum. Hainan Pl. p. 15 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 25 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 35 (1931)

Syn. *Asplenium orientale*, BERHN., in Schrad. Journ. 1801¹. p. 17 (1802)

Blechnopsis orientalis, PRESL, Epim. Bot. p. 117 (1849); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 251 (1930)

Nom. Jap. *Hiryûsida*

Leg. Ipse, Haro, Aug. 2, 1927.

Distr. Amami-Ōsima, Okinawa, Taiwan, Bonins, Philippines, China, Malay, India, Tahiti.

Note. The fern grows as undergrowth in wet places at a low altitude, but not so well. It is rarely found in this island, while flourishes in tropical and subtropical regions. It is not yet found in lands further north than Yakusima.

Spicanta, PRESL, Epim. Bot. p. 114 (1849); O. KUNTZE, Rev. Gen. Pl. II. p. 820 (1891); HAY., in Tokyo Bot. Mag. XLI. p. 700 (1927)

Spicanta nipponica, HAY., in Tokyo Bot. Mag. XLI. p. (700) (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929)

Syn. *Lomaria nipponica*, KUNZE, in Bot. Zeit. p. 508 (1848); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 172 (1867)

Lomaria spicant, DESV. var. *japonica*, HOOK., Sp. Fil. III. p. 16 (1860)

Blechnum nipponicum, MAK., in Tokyo Bot. Mag. XI. p. 82 (1897); CHR., Ind. Fil. Suppl. I. p. 16 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 35 (1931)

Blechnum Spicant, var. *sub serrata*, LOW.; MATSUM., Ind. Pl. Jap. I. p. 297 (1904)

Blechnum Spicant, WITHER, var. *nipponicum*, MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 35 (1930)

Nom. Jap. *Sisigasira*

Leg. Ipse, ca. Kosugidani, Jul. 12, 1928.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū.

Note. The fern grows in the forests at an altitude from about 600 m up to 1700 m. This species has its southern limit in this island.

var. *reflexipinnula*, MASAM., in Journ. Soc. Trop. Agr. IV. p. 303 (1932)

Nom. Jap. *Sakabasisigasira*

Leg. Ipse, Aikodake, 1928.

Note. The fern occurs on somewhat rare occasions at an altitude of about 1000 m.

Woodwardia, SMITH., Mém. Acad. v. p. 411 (1793); DIELS., in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 253 (1899)

Syn. *Lorinseria*, PRESL., Epim. Bot. p. 72 (1849)

Woodwardia Harlandii, HOOK. var. *Takeoi*, MASAMUNE, in Journ. Soc. Trop. Agr. II. p. 151 (1930)

Syn. *Woodwardia Takeoi*, HAY., Ic. Pl. Formos. V. p. 348 (1915); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929); MAK et NEM., Fl. Jap. ed. 2. p. 113 (1931)

Nom. Jap. *Hosoba-Ōkaguma*

Leg. Ipse, ca. Koseda, Jul. 12, 1928.

Distr. Taiwan.

Note. I found this interesting plant among fallen foliage in the laurisilvae, at an altitude of about 500 m. This species has its northern limit in this island.

Woodwardia japonica, SW., in Mém. Acad. Turin. V. p. 411 (1793); SWARTZ, Syn. Fil. p. 116 (1806); WILLD., Sp. Pl. V. p. 417 (1810); SPRENG., Syst. IV. p. 94 (1827); HOOK. f., Sp. Fil. III. p. 69 (1860); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 173 (1867); HOOK. et BAK., Syn. Fil. p. 188 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 217 (1876); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 253 (1899); MATSUM.

et HAY., Enum. Pl. Formos. p. 610 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 393 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 112 (1931)

Syn. *Blechnum japonicum*, LINN. f., Supp. Syst. Veg. p. 447 (1781)

Woodwardia virginica, (non SMITH) MATSUM., Ind. Pl. Jap. I. p. 352 (1904); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929)

Nom. Jap. *Ô-kaguma*

Lcg. Ipse, Kosugidani, Aug. 8, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, China.

Note. It grows as undergrowth in the lauri-aciculilivae, at an altitude from 200 m to 700 m, and it is a common species in southern Japan.

Woodwardia orientalis, SW., in Schrad. Journ. 1800. pt. 2. p. 76 (1801), et Syn. Fil. p. 116 (1806); WILLD., Sp. Pl. V. p. 417 (1810); SPRENGL., Syst. Veg. IV. p. 94 (1827); HOOK., Sp. Fil. III. p. 68 (1860); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 173 (1867); HOOK. et BAK., Syn. Fil. p. 188 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 216 (1876); NAK., in Tokyo Bot. Mag. XXXIX. p. 104 (1926); MAK. et NEM., Fl. Jap. ed. 2. p. 112 (1931)

Syn. *Blechnum japonicum*, (non LINN.) HOUTTUYN, Nat. Hist. XIV. t. 97, f. 1 (1783) *Woodwardia radicans*, (non SMITH) EATON, in Perry's Exp. p. 329 (1856); CHR., in WARB. Mons. I. p. 66 (1900); MATSUM., Ind. Pl. Jap. I. p. 352 (1904)

Woodwardia radicans, SW. var. *orientalis*, LUERSS., Fl. p. 292 (1876); CHR., Ind. Fil. p. 155 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929)

Woodwardia intermedia, CHRIST, in Bull. Herb. Boiss. 2. sér. IV. p. 618 (1904)

Woodwardia radicans, var. *japonica*, CHR., Ind. Fil. p. 658 (1906)

Nom. Jap. *Komotî-sida*

Leg. Ipse, Jul. 14 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. Grows in sunny places at a low altitude; common in southern Japan.

Coniogramme, FÉE, Gen. Fil. p. 167 (1850-52);

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 261 (1899) p.p.

Coniogramme fraxinea, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 262 (1899); KOM., Fl. Mansh. I. p. 140 (1901); MATSUM., Ind. Pl. Jap. I. p. 299 (1906); HAY., Fl. Mont. Formos. p. 244 (1908); NAK., Fl. Kor. II. p. 410 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 25 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 37 (1931)

Syn. *Diplazium fraxineum*, DON, Prodr. Fl. Nep. p. 12 (1825)

Gymnogramme javanica, BL., Enum. Pl. Jav. p. 112 (1828), et Fl. Jav. II, p. 95, t. 41 (1829); HOOK., Sp. Fil. V. p. 145 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 177 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 248 (1876); HENRY, List Pl. Formos. p. 116 (1896); MAK., in Tokyo Bot. Mag. X. p. 180 (1896)

Gymnogramme serrulata, BL., Fl. Jav. II. p. 96, t. 42 (1829)

Gymnogramme fraxinea, BEDD., Fern. Br. Ind. Supp. p. 24 (1876)

Syngramme fraxinea, BEDD., Handb. Fern. Brit. Ind. p. 386 (1883)

Coniogramme falcata, SALOM., Nom. Gefûssk. p. 139 (1883)

Gymnogramme javanica, var. *serrulata*, MAK., in Tokyo Bot. Mag. X. p. (181) (1896)

Neurogramme fraxinea, CHR., Farnk. Erd. p. 63 (1897)

Nom. Jap. *Iwagane-zenmai*

Leg. Ipse, ca. Nakama, Jul. 7, 1928.

Distr. Kuriles, Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, Manchuria, China, India, Australia.

Note. Grows on rocky ground or on rocks in the laurisilvae; distributed throughout tropical and subtropical regions.

Hypolepis, BERNHARDI, in Schrad. neu. Journ.

I. p. 34 (1806); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 277 (1899)

Hypolepis punctata, METT.; KUHN., Fil. Afr. p. 120 (1886; CHRIST, in Bull. Herb. Boiss. VII. p. 818 (1899); MATSUM., Ind. Pl. Jap. I. p. 310 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 613 (1906; NAK., Fl. Kor. II. p. 412 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 371 (1911); HAY., in Tokyo Bot. Mag. XLI. p. (717 (1927); MERR., Enum. Hainan Pl. p. 15 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 74 (1931)

Syn. *Polypodium punctatum*, THUNB., Fl. Jap. p. 337 (1784); HOOK. et BAK., Syn. Fil. p. 312 (1867)

Phegopteris punctata, METT., in Ann. Mus. Bot. Lugd. Bat. I. p. 222 (1864)

Nephrodium punctatum, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 177 (1899)

Dryopteris punctata, C. CHR., Ind. Fil. p. 287 (1905)

Nom. Jap. *Iwahimeuayabi*

Leg. Ipse, Kosuqidani Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China, Philippines, Polynesia, Australia.

Note. It grows in dry and sunny places, mostly in the lauri-aciculisilvae, and is common in southern Japan.

Onychium, KAULFUSS, Jahr. d. Pharm. Berlin.

p. 45 (1820; H. CHR., Farnk. Erd. p. 154 (1897)

Onychium japonicum, KUNTZE, in Bot. Zeit. p. 507 (1848; HOOK. et BAK., Syn. Fil. p. 143 (1867; CHR., Farnk. Erd. p. 155 (1897; NAK., Fl. Kor. II. p. 412 (1911; et in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930; MATH., in Journ. Linn. Soc. XXXIX. p. 375 (1911; MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 81 (1931)

Syn. *Trichomanes japonicum*, THUNB., Fl. Jap. p. 340 (1784)

Caenopteris japonica, THUNB., Nov. Act. Petr. IX. p. 161, t. G. f. 2 (1795)

Darea japonica, WILLD., Sp. Pl. V. p. 302 (1810)

Leptostegia lucida, DON, Prodr. Fl. Nep. p. 14 (1825)

Onychium lucida, SPR., LINN. Syst. Veg. IV. p. 66 (1827)

Cheilanthes contigua, WALL., Cat. n. 72 (1828)

Cheilanthes lucida, WALL., Cat. n. 69 (1828)

Allosorus capensis, PRESL. Tent. Pt. p. 152 (1836)

Pteris japonica, METT., Fil. Lips. p. 54 (1856)

Cryptogramme japonica, PRANT., in Engl. Bot. Jahrb. III. p. 413 (1882); MATSUM., Ind. Pl. Jap. I. p. 300 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 614 (1906)

Nom. Jap. *Tatisinobu*

Leg. Ipse, ca. Kurio, Jun. 27, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines, Java, India.

Note. It is found along the roadside, or margins of forests at a low altitude, and is widely distributed in southern Japan.

Pteris, LINN., Sp. Pl. ed. 1. p. 1073 (1753);

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 290 (1899)

Syn. *Campteria*, PRESL, Tent. Pt. p. 146 (1836)

Litobrochia, PRESL, Tent. Pt. p. 148 (1836) p.p.

Pycnodoria, PRESL, Epim. Bot. p. 100 (1849)

Pteris biaurita, LINN., Sp. Pl. ed. 1. p. 1076 (1753); HOOK., Sp. Fil. II. p. 203 (1858);

HOOK. et BAK., Syn. Fil. p. 164 (1867); MATSUM., Ind. Pl. Jap. I. p. 345 (1904);

MATSUM. et HAY., Enum. Pl. Formos. p. 618 (1906); MATH., in Journ. Linn.

Soc. XXXIX. p. 388 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929)

Syn. *Pteris nemoralis*, WILLD., Enum. Pl. Hort. p. 1073 (1809), et Sp. Pl. V. p. 386 (1810)

Campteria biaurita, HOOK., Gen. Fil. t. 65-A (1842)

Campteria nemoralis, J. SMITH, Bot. Mag. LXXII. Comp. p. 23 (1846)

Pteris dispar, KUNZE, in Bot. Zeit. p. 539 (1848); MAK. et NEM., Fl. Jap. ed. 2. p. 106 (1931)

Litobrachia biaurita, J. SMITH, Cat. Cult. Fern. p. 37 (1857)

Pteris Grevilleana, (non WALL.); HENRY, List Pl. Formos. p. 111 (1896)

Pteris Kleiniana, CHR., in Bull. Herb. Boiss. IV. p. 666 (1896), et in WARB. Mons. I. p. 70 (1900)

Nom. Jap. *Kokesida*

Leg. Ipse, Jul. 15, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, China.

Note. The fern grows in somewhat sunny places, such as along roadside, or in clearings in the laurisilvae or lauri-aciculisilvae, and is common in southern Japan.

var. *quadraurita*, LUERSS., in Engl. Bot. Jahrb. IV. p. 355 (1883); MAK., in Tokyo Bot. Mag. X. p. 151 (1896); MATSUM., Ind. Pl. Jap. I. p. 345 (1904); MATSUM.

et HAY., Enum. Pl. Formos. p. 618 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929)

Syn. *Pteris quadraurita*, RETZ., Obs. VI. p. 38 (1891); HOOK., Sp. Fil. II. p. 179, t.

134-B (1858); BEDD., Fern. South. Ind. p. 11 (1863); HOOK. et BAK., Syn.

Fil. p. 158 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 214 (1876); HARRINGT.,

in Journ. Linn. Soc. XVI. p. 28 (1877); BAK., in Journ. Bot. XXIII. p. 103

(1885); HENRY, List Pl. Formos. p. 111 (1896); CHR., in Warb. Mons. I. p.

69 (1900); YABE, in Tokyo Bot. Mag. XVI. p. 51 (1902)

Pteris hachijoensis, NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 106 (1931)

Nom. Jap. *Hatizyô-sida*

Leg. Ipse, Onoaida, Mart. 4, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins.

Note. The variety is found in almost the same conditions as the type species.

Pteris flavicaulis, HAY., Mat. Fl. Formos. p. 443 (1911); MASAMUNE, Prel. Rep. Veg.

Yak. p. 32 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 106 (1931)

Nom. Jap. *Hosoba-hatizyô-sida*

Leg. Ipse, Jul. 17, 1922.

Distr. Taiwan.

Note. The species grows in the laurisilvae or in the lauri-aciculisilvae, and it is restricted to Formosa and to this island, as far as I am aware.

Pteris longipinnula, WALL., Cat. n. 108 (1828); HOOK., Sp. Fil. II. p. 179, t. 134-A. (1858); HOOK. et BAK., Syn. Fil. p. 158 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 214 (1876); BEDD., Handb. Fern. Brit. Ind. p. 112 (1892); CHR., in Bull. Herb. Boiss. VI. p. 956 (1898); MATSUM., Ind. Pl. Jap. I. p. 346 (1904); MATH., in Journ. Linn. Soc. XXXIX. p. 389 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 107 (1931)

Nom. Jap. *Ôba-no-hatizyô-sida*

Leg. Ipse, Aug. 6, 1921.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, China, India.

Note. It grows as undergrowth on damp spots in the laurisilvae and occurs on rare occasions in the southern part of Honsyû, and Kyûsyû in Japan.

Pteris multifida, POIR., Encycl. V. p. 714 (1804); NAK., Fl. Kor. II. p. 397 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 389 (1911) p.p.; MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 107 (1931)

Syn. *Pteris serrulata*, LINN. f., Supp. p. 445 (1781); HOOK., Sp. Fil. II. p. 167 (1868); HOOK. et BAK., Syn. Fil. p. 155 (1867); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 292 (1899); MATSUM., Ind. Pl. Jap. I. p. 349 (1904)

Nom. Jap. *Inomotosô*

Leg. Miyanoura.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, China.

Note. Grows in crevices of stone walls or on rocky ground near dwellings; common in Japan.

Pteris semipinnata, LINN., Sp. Pl. ed. 1. p. 1076 (1753); THUNB., Fl. Jap. p. 333 (1784); HOOK., Sp. Fil. II. p. 169 (1858); BENTH., Fl. Hongk. p. 448 (1861); HOOK., Gard. Fern. t. 59 (1862); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 172 (1867); HOOK. et BAK., Syn. Fil. p. 157 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 214 (1876); HARRINGT., in Journ. Linn. Soc. XVI. p. 27 (1877); BAK., in Journ. Bot. XXIII. p. 103 (1885); BEDD., Fern. Brit. Ind. p. 109 (1892); HENRY, List Pl. Formos. p. 111 (1896); MAK., in Tokyo Bot. Mag. X. p. 148 (1896); CHR., Farnk. Erd. p. 166, f. 499 (1897); et in WARB. Mons. I. p. 69 (1900); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 292 (1899); et in Engl. Bot. Jahrb. XXIX. p. 202 (1900); MATSUM., Ind. Pl. Jap. I. p. 346 (1904); COPEL., Polyp. Philipp. p. 101 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 622 (1906); NAK., Fl. Kor. II. p. 398 (1911); MATH., in Journ. Linn. Soc. XXXIX. p. 390 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 108 (1931)

Syn. *Pteris inaequalis*, BAK., in Journ. Bot. IV. p. 199 (1875)

Nom. Jap. *Ô-amakusasida*

Leg. Ipse, ca. Hunayuki, Mart. 24, 1923.

Distr. Kyûsyû, Amami-Ôsima, Taiwan, Korea, China, Philippines, India.

Note. As undergrowth, especially on rocky ground, from a low altitude up to about 1000 m; widely distributed in South Japan.

Pteris quadriaurita, RETZ., Obs. VI. p. 38 (1791); MAK. et NEM., Fl. Jap. ed. 2. p. 108 (1931)

Syn. *Pteris semipinnata*, LINN. var. *dispar*, BAK. et HOOK., Syn. Fil. p. 157 (1867);

HARRINGT., in Journ. Linn. Soc. XVI. p. 27 (1877); MAK., in Tokyo Bot. Mag. X. p. 149 (1896); CHR., in WARB. Mons. I. p. 69 (1900), et in Bull. Soc. Bot. Ital. p. 293 (1901); MATSUM., Ind. Pl. Jap. I. p. 346 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 622 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 390 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929)

Nom. Jap. *Amakusa-sida*

Lcg. Ipse, Aug. 12, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegashima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The fern grows in abundance in the same condition as the previous species, and is common in South Japan.

Pteris Wallichiana, AGR., Rec. Sp. Gen. Pt. p. 69 (1839); HOOK., Sp. Fil. II. p. 206 (1858); HOOK. et BAK., Syn. Fil. p. 165 (1857); CHR., in WARB. Mons. I. p. 70 (1900); MATSUM., Ind. Pl. Jap. I. p. 347 (1904); COPEL., Polyph. Philipp. p. 103 (1905); MATSUM. et HAY., Enum. Fl. Formos. p. 623 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 390 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 109 (1931)

Nom. Jap. *Nati-sida*

Lcg. Ipse, ca. Ambô, Aug. 29, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegashima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines.

Note. It is found in wet places from the sea level up to about 500 m sometimes in sunny places and is distributed from Honsyû to Formosa, but it is not so common in Japan.

Histiopteris, J. SMITH, Hist. Fil. p. 294 (1875);

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 294 (1899)

Syn. *Pteris*, Sect. *Histiopteris*, AGARDH, Rec. Gen. Pt. p. 76 (1839)

Histiopteris incisa, J. SMITH, Hist. Fil. p. 295 (1875); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 294 (1899); MATSUM., Ind. Pl. Jap. I. p. 309 (1904); COPEL., Polyph. Philipp. p. 104 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 624 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 369 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); NAK., in Bull. Biozogr. Soc. Jap. I. p. 251 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 73 (1931); MERR., in Linn. Soc. Journ. XI. p. 37 (1932)

Syn. *Pteris incisa*, THUNB., Prod. Fl. Cap. p. 171 (1800); HOOK., Sp. Fil. II. p. 230 (1858); HOOK. et BAK., Syn. Fil. p. 172 (1867); HARRINGT., in Journ. Linn. Soc. XVI. p. 28 (1877); BAK., in Journ. Bot. XXIII. p. 103 (1885); HENRY, List Pl. Formos. p. 111 (1896); CHR., in Farnk. Erd. p. 163 (1897), et in WARB. Mons. I. p. 68 (1900)

Pteris Vespertilionis, LAB., Nov. Holl. Pl. Sp. II. p. 96, t. 245 (1806)

Pteris elegans, SW., Vet. Ak. Handl. p. 70 (1817)

Lithobrachia incisa, PRESL, Tent. Pt. p. 149 (1836)

Phegopteris incisa, KEYS., Pol. Cyath. Herb. Bung. p. 51 (1873)

Nom. Jap. *Yunomine-sida*

Lcg. Ipse, Kusugawa, Mart. 17, 1923.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines, Malay.

Note. The species ranges from a low altitude up to about 600 m in wet places.

It is found from southern Honsyû to Formosa and abundantly occurs in tropical and subtropical regions of both hemispheres.

Pteridium, GLEDITCH; SCOPOLI, Fl. Carniolica.

p. 169 (1760); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 296 (1899)

Syn. *Ornithopteris*, J. SMITH, Hist. Fil. p. 297 (1875) p.p.

Pteris, Sect. *Ornithopteris*, AGARDH., Rec. Gen. Pt. p. 45 (1839)

Pteridium aquilinum, KUHN. var. **japonicum**, NAK., in Tokyo Bot. Mag. XXXIX. p. 106 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 32 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 39 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 105 (1931)

Syn. *Pteridium aquilinum*, non KUHN. LUERSS., in Engl. Bot. Jahrb. IV. p. 355 (1883); PALIB., Consp. Fl. Kor. III. pp. 142-42 (1901); KOM., Fl. Mansh. I. p. 144 (1901); MATSUM., Ind. Pl. Jap. I. p. 345 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 624 (1906); NAK., Fl. Kor. II. p. 412 (1911)

Pteris aquilina, THUNB., Fl. Jap. p. 332 (1784); BENTH., Fl. Hongk. p. 449 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 172 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 215 (1876); CHRIST., in WARB. Mons. I. p. 68 (1900)

Nom. Jap. *Warabi*

Leg. A. KIMURA! Aug. 9, 1922.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China.

Note. Found in waste places at a low altitude; common in Japan.

Vittaria, J. SMITH, Mem. Acad. Turin. V. p.

413, t. 9 (1793); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 299 (1899)

Syn. *Haplopteris*, PRESL, Tent. Pt. p. 111 (1836)

Taenopsis, J. SMITH, in Journ. Bot. IV. p. 67 (1841)

Vittaria formosana, NAK., in Tokyo Bot. Mag. XXXIX. p. 176 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 110 (1931)

Syn. *Vittaria elongata*, non SW., MATSUM., Ind. Pl. Jap. I. p. 350 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 625 (1906); HAY., Ic. Pl. Formos. VI. p. 161 (1916); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929)

Nom. Jap. *Sima-sisiran*

Leg. Ipse, ca. Koseda, Jul. 14, 1927.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins.

Note. It grows as an epiphyte on laurigneous trees at about 500 m above the sea level, and is distributed from Formosa to Tanegasima.

Vittaria japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 169 (1867); MAK., Phan. et Pterid. Jap. Ic. III. I. Pl. 24 (1899); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 110 (1931)

Syn. *Vittaria lineata*, non SW., MATSUM., Ind. Pl. Jap. I. p. 351 (1904)

Nom. Jap. *Sisiran*

Leg. Ipse, Kosugidani, Mart. 17, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. It grows as an epiphyte on tree trunks, and on rocks, from a low altitude up to about 1000 m, and is common in southern Japan.

Drymoglossum, PRESL, Tent. Pt. p. 227 (1836);

DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 302 (1899)

Syn. *Lemmaphyllum*, PRESL, Epim. Bot. p. 157 (1849)

Drymoglossum microphyllum, C. CHR., Ind. Fil. p. 246 (1905), et (1906) p.p.; MATH., in Journ. Linn. Soc. XXXIX. p. 359 (1911); MAK. et NEM., Fl. Jap. ed. 1. p. 1607 (1925), et ed. 2. p. 50 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 26 (1929)

Syn. *Pteris piloselloides*, (non LINN.) THUNB., Fl. Jap. p. 331 (1784)

Nothlaena piloselloides, KAUL., Enum. Fil. p. 133 (1824) p.p.

Lemmaphyllum microphyllum, PRESL., Epim. Bot. p. 263 (1849) excl. spec. ex Jav.

Taenitis microphylla, METT. ex MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 170 (1867)

Drymoglossum carnosum, (non J. SMITH) FR. et SAV., Enum. Pl. Jap. II. p. 250 (1876)

Drymoglossum subcordatum, FÉE. Trois. Mém. p. 29 (1852); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 303 (1898¹); CHR., in WARB. Mons. I. p. 66 (1900) p.p.

Drymoglossum carnosum, var. *microphyllum*, NAK., Fl. Kor. II. p. 413 (1911¹), et in Tokyo Bot. Mag. XXVIII. p. 93 (1914)

Nom. Jap. *Mamezuta*

Leg. Ipse, Jul. 7, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China.

Note. It is a common epiphyte in South Japan. It grows on tree trunks and on rocks in the lauri-aciculilivae.

Polypodium, LINN., Sp. Pl. ed. 1. p. 1082 (1753)

p.p.; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 306 (1899) p.p.

Syn. *Grammitis*, SWARTZ, Schrad. Journ. 1800². p. 17 (1801)

Pleopeltis, HUMB. et BONPL. apud WILLD., Sp. Pl. V. p. 211 (1810)

Adenophorus, GAUD., Ann. Sc. Nat. III. p. 508 (1824)

Marginaria, BORY, Dict. Class. d'Hist. Nat. VI. p. 587 (1824) et X. p. 176 (1826)

Selliguea, BORY, Dict. Class. d'Hist. Nat. VI. p. 587 (1824)

Xiphopteris, KAUL., in Jahrb. f. d. Pharmacie, Berlin, 1820, p. 35, et Enum. Fil. p. 85 (1824)

Amphoradenium, DESV., Prodr. p. 335 (1827)

Calymmodon, PRESL., Tent. Pt. p. 203 (1836)

Campyloneurum, PRESL., Tent. Pt. p. 189 (1836)

Goniophlebium, PRESL., Tent. Pt. p. 185 (1836)

Phymatodes, PRESL., Tent. Pt. p. 195 (1836)

Synnamina, PRESL., Tent. Pt. p. 212 (1836)

Cyrtophlebium, J. SMITH, in Journ. Bot. IV. p. 58 (1841)

Phlebodium, J. SMITH, in Journ. Bot. IV. p. 58 (1841)

Cryptosorus, FÉE. Congr. Sc. France X. sess. I. p. 178 (1843¹), et Gen. Fil. p. 231 (1850-52)

Dictymia, J. SMITH, in Bot. Mag. LXXII. p. 16 (1846)

Mecosorus, KLOTZSCH, in Linn. XX. p. 404 (1847)

Colysis, PRESL., Epim. Bot. p. 146 (1849) p.p.

Pleuridium, FÉE., Gen. Fil. p. 273 (1850-52)

Anapeltis, J. SMITH, Cat. Fern. p. 5 (1857)

Paragramma, MOORE, Ind. XXXII. (1857)

Schellolepsis, J. SMITH, Fern. Brit. and Foreign, p. 82 (1866)

Phymatopsis, J. SMITH, Hist. Fil. p. 104 (1875)

Polypodium Plumeum, CHR., Ind. Fil. p. 513 (1905)

Syn. *Loxogramme Blumeum*, PRESL, Tent. Pt. p. 215 (1836)

Selliguea Blumei, KUNZE, in Bot. Zeit. p. 420 (1846)

Polypodium avenium, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 170 (1867)

Gymnogramme Blumei, FR. et SAV., Enum. Pl. Jap. II. 1, p. 284 (1876) p.p.

Gymnogramme lanceolata, (non HOOK.) MATSUM., Nippon Shokubutsu, Mei-i, p. 89 (1884); HARRING., in Journ. Linn. Soc. XVI. p. 33 (1887)

Polypodium Loxogramme, MAK., in Tokyo Bot. Mag. IX. p. (246) (1895); MATSUM. et HAY., Enum. Pl. Formos. p. 633 (1906)

Gymnogramme involuta, (non HOOK.) MAK., in Tokyo Bot. Mag. X. p. (179) (1896), et Phan. et Pterid. Jap. Ic. III. 6. Pl. XXXV. (1899)

Polypodium involutum, (non DESV. nec. METT.) MATSUM., Ind. Pl. Jap. I. p. 335 (1904) excl. syn.

Polypodium scolopendrium, (non CHR.) MAK. et NEM., Fl. Jap. ed. 1. p. 1650 (1925); MERR., Enum. Hainan Pl. p. 19 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929)

Loxogramme Fauriei, COPEL., in Philipp. Journ. Sc. Bot. XI. p. 45 (1916); MERR., in Philipp. Journ. Sc. Bot. XIII. p. 127 (1918)

Nom. Jap. *Saziran*

Leg. Ipse, Mart. 17, 1923.

Distr. Honsyû. Sikoku, Okinawa, Taiwan, China.

Note. The fern grows on tree trunks, or on rocks in the lauri-aciculisilvae.

Polypodium Buergerianum, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 170 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 245 (1876); BAK., in Ann. Bot. V. p. 475 (1891); CHR., in WARB. Mons. I. p. 61 (1900); MATSUM., Ind. Pl. Jap. I. p. 333 (1904); MATSUM. et HAY., Fnum. Pl. Formos. p. 628 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 377 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929)

Syn. *Polypodium avenium*, METT., Fil. Lip. p. 37 (1856)

Gymnogramme Blumei, FR. et SAV., Enum. Pl. Jap. II. p. 248 (1876)

Polypodium brachylepis, BAK., in Gard. Chr. n. s. XIV. p. 494 (1880)

Polypodium Buergerianum, MIQ. var. *stipitatum*, TAKEDA, in Not. Roy. Bot. Gard. Edin. XXXIX. p. 290 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 85 (1931)

Nom. Jap. *Nukabosi-sida*

Leg. Ipse, Ambô, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The fern grows in the laurisilvae, from a low altitude up to about 400 m and is widely distributed in South Japan.

Polypodium ellipticum, THUNB. var. *pothifolium*, MAK., in Tokyo Bot. Mag. XXIII. p. 72 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 86 (1931)

Syn. *Hemionitis pothifolia*, HAMILT., ex Don, Prodr. Fl. Nep. p. 13 (1825)

Gymnogramme pothifolia, SPR., Syst. Veg. IV. p. 39 (1827); MAK., in Tokyo Bot. Mag. XII. p. 166 (1898)

Graminitis decurrens, WALL., Cat. no. 5 (1828); HOOK. et GREV., Ic. Fil. I. t. 6 (1827); BENTH., Fl. Hongk. p. 457 (1861)

Selliguea decurrens, PRESL, Tent. Pt. p. 216 (1836); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 274 (1836-40); KUNZE, in Bot. Zeit. VI. p. 494 (1848); BEDD., Ferns Brit. Ind. t. 150 (1866)

Selliguea pothifolia, J. SMITH, in Journ. Bot. III. p. 399 (1840), et Ferns Brit. and Foreign, p. 97 (1896)

Polypodium pothifolium, METT., Far. Bot. Gart. Leip. p. 130, t. 25, f. 21 (1856)

Gymnogramme decurrens, HOOK., Sp. Fil. V. p. 161 (1864)

Gymnogramme elliptica, HOOK. et BAK., Syn. Fil. p. 389 (1868); CLARKE, in Trans. Linn. Soc. 2, ser. Bot. I. p. 570 (1880); HENRY, List Pl. Formos. p. 116 (1896)

Selliguea elliptica, BEDD., Handb. Ferns Brit. Ind. p. 392 (1892) excl. Syn. *P. ellipticum*, THUNB.

Polypodium ellipticum, (non THUNB.) CHR., Farnk. Erd. p. 107 (1897); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 318 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 629 (1906) p.p.; ROSENB., Malayan Ferns, p. 677 (1908); MATH., in Journ. Linn. Soc. XXXIX. p. 378 (1911) p.p.

Nom. Jap. *Ô-iwahitode*

Leg. Ipse, Jul. 14, 1922.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Malay. India.

Note. The species is often found on rocks as undergrowth in the laurisilvae, and is common in southern Japan.

var. **typicum**, MAK., in Tokyo Bot. Mag. XXIII. p. 72 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 86 (1931)

Syn. *Polypodium ellipticum*, THUNB., Fl. Jap. p. 335 (1781); SW., Syn. Fil. p. 63 (1806); MATSUM. et HAY., Enum. Pl. Formos. p. 629 (1906) p.p.; MATH., in Journ. Linn. Soc. XXXIX. p. 378 (1911) p.p.; MORI, Enum. Pl. Cor. p. 14 (1922)

Gymnogramme elliptica, (non HOOK. et BAK.) MAK., in Tokyo Bot. Mag. XII. p. 166 (1898)

Nom. Jap. *Iwahitode*

Leg. Ipse, Jul. 18, 1928.

Distr. Kyûsyû, Tanegasima, Okinawa, Taiwan, Bonins, Korea, China.

Note. The fern is found on rocks in the laurisilvae as undergrowth and common in southern Japan.

Polypodium Engleri, LUERSS., in Engl. Bot. Jahrb. IV. p. 361 (1883); BAK., in Ann. Bot. V. p. 478 (1891); MATSUM., Ind. Pl. Jap. I. p. 334 (1904); MORI, Enum. Pl. Cor. p. 15 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 86 (1931)

Nom. Jap. *Takanoha-urabosi*

Leg. Ipse, Kosugidani, Mart. 17, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea.

Note. The species grows as an epiphyte on tree trunks, and on rocks in the lauri-aciculisilvae.

Polypodium ensatum, THUNB., in Trans. Linn. Soc. II. p. 341 (1794); HOOK., Sp. Fil. V. p. 72 (1864); METT., in Ann. Mus. Bot. Lugd. Bat. II. p. 228 (1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 171 (1867); HOOK. et BAK., Syn. Fil. p. 361 (1868); FR. et SAV., Enum. Pl. Jap. II. p. 246 (1876); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 315 (1899), et in Engl. Bot. Jahrb. XXIX. p. 203 (1900); CHR., in Bull. Herb. Boiss. IV. p. 673 (1896), et in WARB. Mons. I. p. 61 (1900); MATSUM., Ind. Pl. Jap. I. p. 334 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 630 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 378 (1911); MORI, Enum. Pl.

Cor. p. 15 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 87 (1931)

Syn. *Polypodium phyllitis*, THUNB., Fl. Jap. p. 335 (1784)

Drynaria ensata, EAT., in Perry, Narr. Exp. p. 329 (1856)

Pleopeltis ensata, MOORE, Ind. Fil. p. 346 (1862)

Nom. Jap. *Kuriharan*

Leg. Ipse, ca. Ambô.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, China.

Ncte. It grows as undergrowth in the laurisilvae and is common in South Japan.

Polypodium Hancockii, BAK., in Journ. Bot. XXIII. p. 105 (1885), et in Ann. Bot. V. p. 479 (1891); HENRY, List Pl. Formos. p. 115 (1896); MATSUM. Ind. Pl. Jap. I. p. 334 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 631 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 87 (1931)

Nom. Jap. *Hokozaki-urabosi*

Leg. Ipse, Jul. 11, 1928.

Distr. Okinawa, Taiwan.

Note. The species is found on the rocks by running waters, as undergrowth in the laurisilvae. It has its northern limit in this island.

Polypodium hastatum, THUNB., Fl. Jap. p. 335 (1784), et Ic. Pl. Jap. III. p. 10, t. 10 (1801); HOOK., Sp. Fil. V. p. 74 (1864); METT., in Ann. Mus. Bot. Lugd. Bat. II. p. 227 (1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 171 (1867); HOOK. et BAK., Syn. Fil. p. 361 (1858); FR. et SAV., Enum. Pl. Jap. II. p. 247 (1876); HARRINGT., in Journ. Linn. Soc. XVI. p. 33 (1877); MAXIM., Fl. As. Or. Fragm. p. 73 (1879); BAKER, in Journ. Bot. XXIII. p. 106 (1885); MAK., in Tokyo Bot. Mag. IX. p. 246 (1895); HENRY, List Pl. Formos. p. 115 (1896); CHR., in Bull. Herb. Boiss IV. p. 673 (1896); FARNK. Erd. p. 109 (1897), et in WARB. Mons. I. p. 62 (1900); HEMSLE., in Journ. Linn. Soc. Bot. XXXV. p. 206 (1902); DIELS, in ENGL. Bot. Jahrb. XXIX. p. 205 (1900); MATSUM., Ind. Pl. Jap. I. p. 334 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 631 (1906); ROSENB., Malayan Ferns, pp. 660 et 832 (1908); NAK., Fl. Kor. II. p. 415 (1911); OGATA, Ic. Fil. Jap. I. Pl. 391 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 40 (1930); YAMAZUTA, List Manch. Pl. p. 5 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 88 (1931)

Syn. *Polypodium trifidum*, non HOFF. nec. WITH. DON, Prodr. Fl. Nep. p. 3 (1825); HOOK. et BAK., Syn. Fil. p. 363 (1868)

Drynaria hastata, FÉE, Gen. Fil. p. 270 (1850-52); EAT., in Perr. Exp. p. 329 (1856)

Pleopeltis hastata, MOORE, Ind. Fil. p. 346 (1862)

Pleuridium oxyloba J. SMITH, Fern. Brit. and For. p. 96 (1866)

Phymatopsis trifida, J. SMITH, Hist. Fil. p. 105 (1875)

Nom. Jap. *Mitsude-urabosi*

Leg. Ipse, Nagata, Aug. 20, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôshima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, Malay, Himalaya, Ceylon.

Note. It grows very often on precipitous ground as for instance, on the cut out surface of roads and is common in Japan.

Polypodium lineare, THUNB., Fl. Jap. p. 335 (1784), et Ic. Pl. Jap. II. t. 9 (1800); EAT., in Perr. Exped. p. 329 (1856); METT., in Ann. Mus. Bot. Lugd. Bat. II. p. 224

(1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 170 (1867); HOOK. et BAK., Syn. Fil. p. 354 (1868); FR. et SAV., Enum. Pl. Jap. II. p. 245 (1876); LUERSS., in Engl. Bot. Jahrb. IV. p. 360 (1883); BAK., in Journ. Bot. XXIII. p. 106 (1885); CHR., in Bull. Herb. Boiss. IV. p. 672 (1896), Farnk. Erd. p. 102 (1897), in WARB. Mons. I. p. 61 (1900), et in Bull. Herb. Boiss. 2, sér. I. p. 1014 (1901); HENRY, List Pl. Formos. p. 114 (1896); DIELS, in ENGL. u. PRANT., Nat. Pfl.-fam. I. iv. p. 315 (1899), et in Engl. Bot. Jahrb. XXIX. p. 204 (1900); KOM., Fl. Mansh. I. p. 146 (1901); MATSUM., Ind. Pl. Jap. I. p. 335 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 632 (1906); ROSENB., Malayan Ferns p. 637 (1908); NAK., Fl. Kor. II. p. 414 (1911); MERR., Enum. Hainan Pl. p. 18 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 41 (1930)

Syn. *Pleopeltis nuda*, HOOK., Exot. Fl. I. t. 63 (1823)

Pleopteris elongata, KAULF., Enum. Fil. p. 246 (1824)

Phymatodes elongata, PRESL, Tent. Pt. p. 196 (1836)

Polypodium nudum, KUNZE, in Linn. XXIII. p. 281 (1850)

Drynaria nuda, FÉE, Gen. Fil. p. 270 (1850-52)

Phymatodes nuda, J. SMITH, Bot. Voy. Herald. p. 425 (1857)

Pleopeltis linearis, MOORE, Ind. Fil. p. 346 (1862)

Niphobolus linearis, KEYS, Pol. Cyath. Herb. Bung. p. 39 (1873)

Polypodium lineare, THUNB. var. *Thunbergianum*, TAKEDA, in Not. Roy. Bot. Card. Eding. XXXIX. p. 268 (1915), et in Tokyo Bot. Mag. XXVIII. p. (363) (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 89 (1931)

Nom. Jap. *Nokisinobu*

Leg. Ipse, Jul. 30, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Malay, Hawaii, Ceylon, North India, South Africa.

Note. The fern is found as an epiphyte from a low altitude up to about 500 m.

var. *Onoei*, MAK., in Tokyo Bot. Mag. XI. p. 282 (1897), et Phan. et Pterid. Jap. Ic. III. I. t. 10 (1899); MATSUM., Ind. Pl. Jap. I. p. 336 (1904); MATH., in Journ. Linn. Soc. XXXIX. p. 380 (1911)

Syn. *Drynaria subspathulata*, HOOK., in Journ. Bot. IV. p. 356 (1857)

Polypodium Onoei, FR. et SAV., Enum. Pl. Jap. II. p. 246, (1876) et p. 642 (1879)

Polypodium lineare, THUNB. var. *subspathulatum*, TAKEDA, in Tokyo Bot. Mag. XXVIII. p. (363) (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 90 (1931)

Nom. Jap. *Hime-noki-sinobu*

Leg. Ipse, Aug. 4, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. As an epiphyte on trunks or on branches in the lauri-aciculisilvae, from altitudes of about 200 m up to 800 m.

Polypodium liukiense, CHR., in Bull. Herb. Boiss. 2, sér. II. p. 1014 (1901); MATH., in Journ. Linn. Soc. XXXIX. p. 380 (1911)

Syn. *Polypodium formosanum*, (non BAK.) HENRY, List Pl. Formos. p. 114 (1894); CHR., in WARB. Mons. I. p. 60 (1900); MATSUM., Ind. Pl. Jap. I. p. 334 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 631 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 379 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 30 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 87 (1931) p.m.

Polypodium transpiananense, YAMAMOTO, in Journ. Trop. Agr. III. p. 236 (1931)

Nom. Jap. *Sima-aone-kazura*

Leg. Ipse, Inter Ambô et Kosugidani, April, 5, 1927.

Distr. Amami-Ôsima, Taiwan, China.

Note. The fern grows as an epiphyte in the laurisilvae from the sea level up to about 400 m.

Polypodium Makinoi, C. CHR., Ind. Fil. p. 543 (1905) et (1906); MORI, Enum. Pl. Cor. p. 15 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 90 (1931)

Syn. *Polypodium Loxogramme*, METT.; MAK., in Tokyo Bot. Mag. IX. p. 246 (1895); MATSUM., Ind. Pl. Jap. I. p. 336 (1904) p.p.

Gymnogramme lanceolata, HOOK., Sp. Fil. V. p. 156 (1864) p.p.; FR. et SAV., Enum. Pl. Jap. II. p. 248 (1876); MAK., in Tokyo Bot. Mag. X. p. 178 (1896)

Gymnogramme salicifolia, (non VAHL. nec WILLD. MAK., Phan. et Pter. Jap. Ic. III. t. 34 (1899); MATSUM., Ind. Pl. Jap. I. p. 389 (1904)

Loxogramme salicifolia, MAK., in Tokyo Bot. Mag. XIX. p. 138 (1905)

Loxogramme Makinoi, CHR., Ind. Fil. Supp. II. p. 22 (1917)

Nom. Jap. *Iwa-yanagisida*

Leg. Ipse, Kosugidani, Mart. 17, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea.

Note. As its Japanese name indicates, this fern grows on rocks, sometime on tree trunks, in the lauri-aciculisilvae. The species ranges from Amami-Ôsima to Honsyû.

Polypodium shintenense, HAY., Ic. Pl. Formos. VIII. p. 154, f. 85 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 94 (1931)

Syn. *Polypodium Wrightii*, METT., var. *lobata*, ROSENB., in Hedwigia, LVI. p. 347 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 96 (1931)

Nom. Jap. *Sinten-urabosi*

Leg. Ipse, Yosida, Mart. 21, 1923.

Distr. Kyûsyû, Taiwan.

Note. The species grows on rocks covered with mosses, or grows as undergrowth in the laurisilvae, from 100 m up to 300 m above the sea level. It is distributed from Kyûsyû to Formosa.

Polypodium superficiale, BL., Enum. Pl. Jav. p. 123 (1828), et Fl. Jav. Fil. p. 136, t. 56, f. 1. (1828); HOOK. et BAK., Syn. Fil. p. 355 (1868); CHR., Farnk. Erd. p. 104 (1897), in WARB. Mons. I. p. 61 (1900), et in Bull. Herb. Boiss., 2, sér. I. p. 1014 (1901); LUERS., in Engl. Bot. Jahrb. IV. p. 360 (1883); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 315 (1899), et Fl. Cent. Chin. p. 203 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 631 (1906); CHR., Ind. Fil. p. 568 (1906); ROSENB., Malayan Ferns p. 631 (1908); MATH., in Journ. Linn. Soc. XXXIX. p. 383 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 95 (1931)

Syn. *Polypodium hymenodes*, KUNZE, in Linn. XXIII. pp. 279, 319 (1850); METT., Fl. Hort. Lip. p. 37, t. 25, ff. 40-41 (1856); BENTH., Fl. Hongk. p. 458 (1861)

Pleopeltis superficialis, BEDD., Fern. Brit. Ind. t. 75 (1865)

Colysis superficiale, J. SMITH, Hist. Fil. p. 101 (1875)

Nom. Jap. *Sima-nukabosiran*

Leg. (fide FAURIE!)

Distr. Taiwan, China, Queensland, India, Malay.

Note. The plant is found on rocky ground as undergrowth in the laurisilvae. It has its northern limit in this island.

Polypodium Wrightii, METT.; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 316 (1899); CHR., in WARB. Mons. I. p. 62 (1900); MATSUM., Ind. Pl. Jap. I. p. 340 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 637 (1906); MATH., in Journ. Linn. Soc. XXXIX. p. 384 (1911); MORI, Enum. Pl. Cor. p. 16 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 96 (1931)

Syn. *Gymnogramme Wrightii*, HOOK., Sp. Fil. V. p. 160, t. 303 (1864); HOOK. et BAK., Syn. Fil. p. 388 (1868); HARRINGT., in Journ. Linn. Soc. XVI. p. 33 (1877); BAK., in Journ. Bot. XXII. p. 106 (1885); HENRY, List Pl. Formos. p. 116 (1896); YABE, in Tokyo Bot. Mag. XVI. p. 50 (1902)

Selliguea Wrightii, SMITH, Hist. Fil. p. 102 (1875); LUERSS., in Engl. Bot. Jahrb. IV. p. 364 (1883)

Nom. Jap. *Yarinoho-kuriharan*

Leg. Ipse, Onoaida, Jul. 25, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. It grows on rocks, often on tree trunks, as undergrowth in the laurisilvae. It is found from Kyûsyû to Formosa, but rarely in Japan.

Polypodium yakuinsulare, MASAMUNE, in Journ. Trop. Agr. II. p. 35 (1930)

Nom. Jap. *Yakusima-urabosi*

Leg. Ipse, Sept. 5, 1926.

Note. The species grows as an epiphyte in the lauri-aciculisilvae. It is restricted to this island.

Polypodium yakusnima, CHR., in Bull. Herb. Boiss. Sec. 2, sér. I. p. 1014 (1901); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 96 (1931)

Syn. *Polypodium Loxogramme*, var. *minor*, BAK., ap. MATSUM., Ind. Pl. Jap. I. p. 337 (1904)

Loxogramme minor, MAK., in Tokyo Bot. Mag. XIX. p. 139 (1905)

Loxogramme yakushimae, CHR., Ind. Fil. Sup. II. p. 22 (1917)

Loxogramme yakushimae, NAK., in Tokyo Bot. Mag. XLIII. p. 8 (1929)

Nom. Jap. *Himesaziran*

Leg. Ipse, Jun. 15, 1928.

Distr. Honsyû, Shikoku, Kyûsyû.

Note. The fern grows chiefly on rocks, as undergrowth in the lauri-aciculisilvae, but rather rarely. It is not yet reported in lands further south than this island.

Polypodium yakusimense, MAK., in MAK. et NEM., Fl. Jap. ed. 1. p. 1653 (1925), et ed. 2. p. 97 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 31 (1929)

Syn. *Polypodium Engleri*, LUERSS., var. *yakushimense*, MAK., in Tokyo Bot. Mag. XXIII. p. 248 (1909)

Nom. Jap. *Hime-takanoha-urabosi*

Leg. Ipse, Jul. 28, 1927.

Distr. Honsyû, Kyûsyû.

Note. The species very often grows on granite rocks in river beds exposed to the light of the sun, and has its southern limit of habitat in this island.

Micropolypodium, HAY., in Tokyo Bot. Mag.

XLII. p. 341 (1928)

Micropolypodium Okuboi, HAY., in Tokyo Bot. Mag. XLII. p. 341 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 29 (1929)

Syn. *Polypodium Okuboi*, YATABE, in Tokyo Bot. Mag. V. p. 35, Pl. 21 (1891); MAK. et NEM., Fl. Jap. ed. 2. p. 92 (1931)

Polypodium trichomanoides, non SW.) MAK., in Tokyo Bot. Mag. XV. p. 59 (1901); MATSUM., Ind. Pl. Jap. I. p. 339 (1904)

Nom. Jap. *Ókubosida*

Leg. Ipse, Hananoego, Aug. 8, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species grows as an epiphyte on tree trunks at altitudes from about 1000 m up to 1600 m. It has its southern limit of habitat in this island.

Cyclophorus, DESV., Berl. Mag. V. p. 300 1811

Syn. *Candollea*, MIRBEL, Hist. Nat. Vég. V. p. 86 1803, et Hist. Nat. Pl. IV. p. 69 1803

Niphobolus, KAUL., Enum. Fil. p. 124 1824; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 324 f. 168 1899

Apalophlebia, PRESL, Epim. Bot. p. 137 1849

Galeoglossa, PRESL, Epim. Bot. p. 132 1819

Gyrosorium, PRESL, Epim. Bot. p. 139 1819

Polycampium, PRESL, Epim. Bot. p. 135 1819

Cyclophorus lingua, DESV., Prodr. Foug. p. 224 1827; NAK., Fl. Kor. II. p. 417 1911; MATH., in Journ. Linn. Soc. XXXIX. p. 354 1911; MASAMUNE, Prel. Rep. Veg. Yak. p. 25 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 39 1931

Syn. *Acrostichum lingua*, THUNB., Fl. Jap. p. 330, t. 33 1784

Polypodium lingua, Sw., Syn. Fil. p. 29 1806; METT., Polyp. n. 264 1857; HOOK., Sp. Fil. V. p. 49 1864; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 171 1867; FR. et SAV., Enum. Pl. Jap. II. p. 245 1876; LUERSS., in Engl. Bot. Jahrb. IV. p. 300 1883; BAK., in Journ. Bot. XXIII. p. 106 1885; HENRY, List Pl. Formos. p. 114 1896; CHR., Farnk. Erd. p. 97 1897, et in WARB. Mons. I. p. 60 1900

Niphobolus lingua, SPR., Linn. Sys. Veg. IV. p. 45 1827; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 325 1899, et in Engl. Bot. Jahrb. XXIX. p. 206 1900; KOM., Fl. Mansh. I. p. 147 1901; MATSUM., Ind. Pl. Jap. I. p. 329 1904; MATSUM. et HAY., Enum. Pl. Formos. p. 639 1906

Craspedaria chinensis, LINK, Fil. Sp. p. 118 1841

Polycampium Lingua, PRESL, Epim. Bot. p. 136 1849

Niphobolus Heteractis, J. SMITH, Fern. Brit. and For. ed. 2. p. 296 1877

Polypodium taiwanense, CHR., in WARB. Mons. I. p. 60 1900

Cyclophorus heteractis, C. CHR., Ind. Fil. p. 199 1906

Nom. Jap. *Hitotuba*

Leg. Ipse, Jul. 25, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, India.

Note. It grows as an epiphyte and ranges from the sea level up to about 1600 m. It is common in South Japan.

Elaphoglossum, SCHOTT., Gen. Fil. ad. t. 14

(1834); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 331 1899

Syn. *Aconiopteris*, PRESL, Tent. Pt. p. 236 (1836)

Hymenodium, FÉE, Hist. Acrost. pp. 20, 90 (1845)

Dictyoglossum, J. SMITH, Bot. Mag. LXXII. p. 18 (1846)

Elaphoglossum tosaense, MAK., Phan. et Pterid. Jap. Ic. I. tt. 53-54 (1901); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 73 (1931)

Syn. *Acrostichum tosaense*, YATABE, in Tokyo Bot. Mag. V. p. 149, Pl. 24 (1891); MATSUM., Ind. Pl. Jap. I. p. 284 (1904)

Nom. Jap. *Hiroha-atuita*

Leg. Ipse, ca. Mugio, Jul. 24, 1928.

Distr. Sikoku, Kyûsyû.

Note. It grows as an epiphyte in dark places in the laurisilvae or in the lauri aciculisilvae; rather rare in South Japan. It has not yet been reported in lands further south than Yakusima.

Elaphoglossum Yoshinagae, MAK., Phan. et Pterid. Jap. Ic. I. tt. 51-52 (1901); MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 73 (1931)

Syn. *Acrostichum Yoshinagae*, YATABE, in Tokyo Bot. Mag. V. p. 109, Pl. 23 (1891); MATSUM., Ind. Pl. Jap. I. p. 284 (1904)

Nom. Jap. *Atuita*

Leg. Ipse, ca. Kosugidani, Jul. 21, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Hatizyôshima, Taiwan.

Note. The species is found under almost the same conditions as the previous species. It occurs from Honsyû to Formosa but rather rarely.

| Names of Plants | Regions | | | | | | | | | | |
|--|-----------------------|--------|---------|-------------|------------|--------------|--------|--------|--------------------------------|-----------|---|
| | Philippines Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû prop. | Sikoku | Honsyû | Korea & Southern Kuriles | Saghalien | Northern Kuriles & Kamichatka Manchuria, Amur & Usuri China |
| <i>Cystopteris formosana</i> , HAY. | | + | | | | | | | | | |
| <i>Cystopteris japonica</i> , LUERSS. | | | | + | | + | + | + | | | |
| <i>Acrophorus stipellatus</i> , MOORE | | + | | | | | | | | | |
| <i>Dryopteris abbreviatipinna</i> , MAK. and OGATA | | | | + | + | + | + | + | | | |
| <i>Dryopteris acuminata</i> , NAK. | + | + | + | + | + | + | + | + | + | | + |
| <i>Dryopteris constantissima</i> , HAY. | + | | | | | | | | | | |
| <i>Dryopteris decursive-pinnata</i> , O. KUNTZE | + | | + | + | + | + | + | + | + | | + |
| <i>Dryopteris Dickinsii</i> , CHR. | | | | | | + | + | + | + | | + |

| | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|----|
| <i>Dryopteris Eatoni</i> , O. KUNTZE | + | + | + | | | | | | | | | | | | | | | + |
| <i>Dryopteris erythrosora</i> , O. KUNTZE | + | + | + | + | + | + | + | + | + | + | | | | | | | | ++ |
| <i>Dryopteris fluviialis</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris gracilescens</i> , O. KUNTZE | | | | + | | | | + | + | + | + | | | | | | | |
| <i>D. g.</i> var. <i>glanduligerum</i> , MAK. | | | + | + | + | | | + | + | + | | | | | | | | |
| <i>Dryopteris gymnosora</i> , C. CHR. | | | | | | | | | | | + | + | | | | | | |
| <i>D. g.</i> var. <i>indusiatum</i> , MAK. and NEM. | | | + | | | | | | | + | | | | | | | | |
| <i>Dryopteris hirsutisquama</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris Kodamai</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris lacera</i> , O. KUNTZE | | | | | | | | | + | + | + | + | | | | | | + |
| <i>Dryopteris laxa</i> , C. CHR. | | | | | | | | | | + | + | + | | | | | | + |
| <i>Dryopteris lepigera</i> , O. KUNTZE | + | + | + | + | + | + | + | + | + | + | + | + | | | | | | |
| <i>Dryopteris leptorhachia</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris ligulata</i> , O. KUNTZE | + | | + | + | + | + | | + | + | | | | | | | | | + |
| <i>Dryopteris mingetsuensis</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris mutica</i> , C. CHR. | | | | | | | | | + | + | + | + | + | | | | | |
| <i>Dryopteris ochthodes</i> , C. CHR. | | | + | + | | | | + | + | + | + | | | | | | | + |
| <i>Dryopteris oligophlebia</i> (BAK.) C. CHR. | + | + | + | + | + | | | + | + | + | + | | | | | | | + |
| <i>Dryopteris parasitica</i> , O. KUNTZE | + | + | + | + | + | | | + | + | + | | | | | | | | + |
| <i>Dryopteris Sabaei</i> , C. CHR. | | | | + | | | | + | + | + | + | | | | | | | + |
| <i>Dryopteris sparsa</i> , O. KUNTZE | | | + | + | + | | | + | + | + | | | | | | | | + |
| <i>Dryopteris subexaltata</i> , CHR. | | | + | + | | | | | | | | | | | | | | |
| <i>Dryopteris sublaxa</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris subtripinnata</i> , O. KUNTZE | | | | | | | | | + | | + | + | + | | | | | ++ |
| <i>Dryopteris totta</i> , (WILLD.) MASAMUNE | | | + | + | + | + | + | + | + | + | + | + | + | | | | | + |
| <i>Dryopteris unita</i> , O. KUNTZE | | | + | + | + | + | + | + | + | + | | | | | | | | + |
| <i>Dryopteris Yabei</i> , HAY. | | | + | | | | | | | | | | | | | | | |
| <i>Dryopteris yaku-montana</i> , MASAMUNE | | | | | | | | | | | | | | | | | | |
| <i>Hypodematium crenatum</i> , KUHN. | | | + | | | | | | | + | + | | | | | | | + |
| <i>Aspidium Griffithii</i> , DIELS | | | + | | + | | | + | + | + | | | | | | | | + |
| <i>Polystichum aculeatum</i> , SCHOTT. var. <i>japonicum</i> , CHR. | | | + | | | | | + | + | + | + | | | | | | | |
| <i>Polystichum amabile</i> (BL.) J. SMITH | + | + | + | + | + | + | + | + | + | + | + | + | | | | | | + |
| <i>Polystichum aristatum</i> , PRESL | + | + | | | + | + | + | + | + | + | + | + | | | | | | + |

| Names of Plants | Regions | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|---------|------------|--------------|--------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | | China |
| <i>Polystichum auriculatum</i> , PRESL | + | + | | | | | | | | | | | + |
| <i>Polystichum falcatum</i> , DIESS, var. <i>genuina</i> , MAK. | | + | + | | + | + | + | + | + | + | | | + |
| <i>Polystichum lepidocaulon</i> , J. SMITH | | | + | | + | | + | + | + | + | + | | |
| <i>Polystichum Tachiroanum</i> , TAGAWA | | | + | + | | | | + | | | | | |
| <i>Polystichum Thunbergii</i> , KOIDZ. | | | + | | + | + | + | + | + | + | + | | + |
| <i>Leptochilus virens</i> , C. CHR. | + | + | + | + | + | | + | | | | | | |
| <i>Nephrolepis biserrata</i> , SCHOTT. | + | + | + | + | + | + | + | + | | | | | + |
| <i>Nephrolepis cordifolia</i> , PRESL | + | + | + | + | + | + | + | + | | | | | + |
| <i>Humata repens</i> , DIELS | | | + | + | + | | + | | | + | | | + |
| <i>Davallia Mariesii</i> , MOORE | | | + | | + | | + | + | + | + | + | | + |
| <i>Microlepia marginata</i> , C. CHR. | | | + | + | | | + | + | + | + | + | | + |
| <i>Microlepia pilosella</i> , MOORE | + | + | | | | | + | + | + | + | + | | + |
| <i>Microlepia strigosa</i> , PRESL | + | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Odontosoria chusana</i> , MASAM. | | + | + | + | + | + | + | + | + | + | + | | + |
| <i>O. c.</i> var. <i>tenuifolia</i> , MASAM. | + | + | + | + | + | + | + | + | + | | | | + |
| <i>Dennstaedtia formosae</i> , CHR. | | + | | | | | | | | | | | + |
| <i>Dennstaedtia scabra</i> , MOORE | + | + | + | | | | + | + | + | | | | + |
| <i>Lindsaya cultrata</i> , SW. | + | + | + | + | + | | + | + | + | + | + | | + |
| <i>Lindsaya orbiculata</i> , METT. | + | + | + | + | + | + | + | + | + | + | | | + |
| <i>Athyrium cryptogrammoides</i> , HAY. | | + | | | | | | | | | | | |
| <i>Athyrium cystopteroides</i> , EAT. | | | | | | | | | | | | | |
| <i>Athyrium Goeringianum</i> , MOORE | | | | | | | | + | + | | + | | |
| <i>Athyrium Nakanoi</i> , MAK. | | + | | | | | | | | | | | + |
| <i>Athyrium nipponicum</i> , HANCE | | | | | | | + | + | + | + | + | | + |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|----|
| Athyrium reflexipinnum, HAY. | | + | | | | | | | | | | | | | | | | | |
| Athyrium rigescens, MAK. | | | | | | | | + | ++ | + | | | | | | | | | + |
| Athyrium tozanense, HAY. | | + | | | | | | | | | | | | | | | | | |
| Athyrium Wardii, MAK. | | | | | | | | + | ++ | | | | | | | | | | + |
| Athyrium yokoscense, CHR. | | | + | | | | | + | +++ | + | | | | | | | | + | |
| Diplazium arisanense, HAY. | | + | | | | | | | | | | | | | | | | | |
| Diplazium Conillii, MAK. | | | | + | | | | + | ++++ | | | | | | | | | + | |
| Diplazium costalisorum, HAY. | | + | | | | | | | | | | | | | | | | | |
| Diplazium Fauriei, CHR. | | | | | + | | | | | | | | | | | | | | |
| Diplazium fraxinifolium, PRESL | + | + | + | + | | | | | | | | | | | | | | | + |
| Diplazium Hookerianum, KOIDZ. | | + | | | | | | + | ++ | | | | | | | | | | |
| Diplazium isobasis, CHR. | | + | | | | | | | | | | | | | | | | | |
| Diplazium japonicum, BEDD. | | + | + | + | | | | + | ++++ | | | | | | | | | | + |
| Diplazium lanceum, PRESL | + | + | + | + | + | + | + | + | +++ | | | | | | | | | | + |
| Diplazium lutchuense, KOIDZ. | | | | | | | | | | | | | | | | | | | |
| Diplazium maximum, DON C. CHR. | + | + | + | + | + | | | | | | | | | | | | | | + |
| Diplazium Mettenianum, C. CHR. | | | | | + | | | + | ++ | | | | | | | | | | |
| Diplazium Morii, HAY. | | + | + | + | | | | | | | | | | | | | | | |
| Diplazium simplicifolium, KODAMA | | | | | | | | | | | + | | | | | | | | |
| Diplazium subrigescens, HAY. | | + | | | | | | | | | | | | | | | | | |
| Diplazium Taquetii, C. CHR. | | | + | + | + | + | + | + | +++ | | | | | | | | | | |
| Diplazium Tomitaroanum, MASAMUNE | | + | + | | | | | | ++ | | | | | | | | | | |
| Diplazium virescens, O. KUNTZE | + | | | + | | | | | + | | | | | | | | | | + |
| Diplazium Wichurae, DIELS | | + | - | | | | | + | +++ | | | | | | | | | | + |
| Asplenium abbreviatum, MAK. | | | | | | | | | +++ | | | | | | | | | | |
| Asplenium achillefolium, (LAM.) C. CHR. | | + | + | | | | | + | +++ | | | | | | | | | | + |
| Asplenium cheilosorum, KUNZE | | + | | | | | | | | | | | | | | | | | + |
| Asplenium incisum, THUNB. | | | | | | | | | ++++ | + | + | + | + | + | + | + | + | + | + |
| Asplenium lunulatum, SW. | | | | | | | | | | | | | | | | | | | |
| Asplenium Nakanoanum, MAK. | | + | | | | | | | | | | | | | | | | | |
| Asplenium normale, DON | | + | + | + | | | | + | ++ | | | | | | | | | | |
| Asplenium oligophlebium, BAK. | | | + | + | | | | | + | | | | | | | | | | |
| Asplenium Saurelli, HOOK. | | | | | | | | + | + | + | + | + | | | | | | | ++ |

| Names of Plants | Regions | | | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|------------------------|------------|--------------|--------|--------|-------|-------------------------|-----------|--------------------------------|-------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Ryûkyûs Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamitchatka | Manchuria, Amur & Usuri | China |
| Asplenium Wilfordii, METT. | | | | + | + | + | + | + | + | | | | | | + |
| Asplenium Wrightii, EAT. | + | | + | | + | + | + | + | + | + | | | | | + |
| Asplenium yakumontanum, MASAMUNE . . | | | | | | | | | | | | | | | |
| Asplenium Yoshinagae, MAK. | | | | | + | + | + | + | + | | | | | | |
| Neottopteris Nidus, J. SMITH. | + | + | + | + | + | + | + | + | + | | | | | | + |
| Hymenoasplenium unilaterale, HAY. . . . | + | + | + | + | + | + | + | + | + | + | | | | | + |
| H. u. var. obliquissimum, HAY. | | | + | | | | | | | | | | | | |
| Blechnum orientale, LINN. | + | + | + | + | + | | | | | | | | | | + |
| Spicanta nipponica, HAY. | | | | | | | + | + | + | + | | | | | |
| S. n. var. reflexipinnula, MASAMUNE . . . | | | | | | | | | | | | | | | |
| Woodwardia Harlandii, HOOK. var. Takeoi, MASAMUNE | | | + | | | | | | | | | | | | |
| Woodwardia japonica, SMITH | | | + | | | | | + | + | + | | | | | + |
| Woodwardia orientalis, SW. | | | + | + | + | + | + | + | + | + | | | | | |
| Coniogramme fraxinea, DIELS, | | | + | | + | | + | + | + | + | + | + | + | + | + |
| Hypolepis punctata, METT. | + | | + | | + | | + | + | + | + | | | | | + |
| Onychium japonicum, KUNTZE | + | + | + | + | + | + | + | + | + | + | | | | | + |
| Pteris biaurita, LINN. | | | + | | + | | + | + | + | | | | | | + |
| P. b. var. quadriaurita, LUERSS. | | + | + | + | + | + | + | + | + | | | | | | |
| Pteris flavicaulis, HAY. | | | + | | | | | | | | | | | | |
| Pteris longipinnula, WALL. | | | | | + | | + | + | + | | | | | | + |
| Pteris multifida, POIR. | | | | + | + | + | + | + | + | + | | | | | + |
| Pteris semipinnata, LINN. | + | | + | | + | | + | + | + | + | | | | | + |
| Pteris quadrialata, RETZ. | | | + | + | + | + | + | + | + | | | | | | + |
| Pteris Wallichiana, AGR. | + | | + | + | + | + | + | + | + | | | | | | + |

| | | | | | | | | | | | | | | | | | | | |
|--|-----|----|----|-----|----|----|----|-----|----|-------------------------|----|----|---|-----|----|----|---|---|---|
| <i>Histiopteris incisa</i> , J. SMITH | + | + | + | + | + | + | + | | | | | | | | | | | | + |
| <i>Pteridium aquilinum</i> , KUHN. var. <i>japonicum</i> , NAK. | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Vittaria formosana</i> , NAK. | + | + | + | + | + | | | | | | | | | | | | | | |
| <i>Vittaria japonica</i> , MIQ. | | + | + | + | + | + | + | + | + | | | | | | | | | | |
| <i>Drymoglossum microphyllum</i> , C. CHR. . . . | | + | | + | + | + | + | + | + | + | + | | | | | | | | + |
| <i>Polypodium Blumeum</i> , CHR. | | + | + | | | | | | | + | + | | | | | | | | + |
| <i>Polypodium Buergerianum</i> , MIQ. | | + | + | + | | | | + | + | + | + | | | | | | | | + |
| <i>Polypodium ellipticum</i> , THUNB var. <i>pothifolium</i> , MAK. | + | + | + | + | + | + | | | | | | | | | | | | | + |
| <i>P. e.</i> var. <i>typicum</i> , MAK. | + | + | + | | | | + | + | + | + | + | | | | | | | | + |
| <i>Polypodium Engleri</i> , LUERSS. | | + | | | | | | + | + | + | + | | | | | | | | |
| <i>Polypodium ensatum</i> , THUNB. | | + | | | | | | + | + | + | + | | | | | | | | + |
| <i>Polypodium Hancockii</i> , BAK. | | + | + | | | | | | | | | | | | | | | | |
| <i>Polypodium hastatum</i> , THUNB. | + | + | + | + | | | + | + | + | + | + | + | | | | | | + | + |
| <i>Polypodium lineare</i> , THUNB. | | + | + | + | + | | + | + | + | + | + | + | | | | | | + | + |
| <i>P. l.</i> var. <i>Onoei</i> , MAK. | | | | | | + | | + | + | | | | | | | | | | |
| <i>Polypodium luikiuense</i> , CHR. | | + | | + | | | | | | | | | | | | | | | + |
| <i>Polypodium Makinoi</i> , C. CHR. | | | | | + | + | + | + | + | + | + | | | | | | | | |
| <i>Polypodium shintenense</i> , HAY. | | + | | | | | | + | | | | | | | | | | | |
| <i>Polypodium superficiale</i> , BL. | | + | | | | | | | | | | | | | | | | | + |
| <i>Polypodium Wrightii</i> , METT. | | + | + | + | + | + | + | | | | | + | | | | | | | + |
| <i>Polypodium yakuinsulare</i> , MASAMUNE . . . | | | | | | | | | | | | | | | | | | | |
| <i>Polypodium yakushimae</i> , CHR. | | | | | | | | | + | + | + | | | | | | | | |
| <i>Polypodium yakusimense</i> , MAK. | | | | | | | | | + | | + | | | | | | | | |
| <i>Micropolypodium Okuboi</i> , HAY. | | | | | | | | | | + | + | + | | | | | | | |
| <i>Cyclophorus lingua</i> , DESV. | | + | + | + | + | | + | + | + | + | + | + | | | | | | + | + |
| <i>Elaphoglossum tosaense</i> , MAK. | | | | | | | | | | + | + | | | | | | | | |
| <i>Elaphoglossum Yoshinagae</i> , MAK. | | + | | + | | | | | + | + | + | | | | | | | | |
| Total | 149 | 24 | 23 | 107 | 60 | 75 | 42 | 107 | 94 | 95 | 52 | 16 | 3 | 1 | 14 | 77 | | | |
| Percentage | | 16 | 15 | 72 | 40 | 53 | 28 | 72 | 62 | 64 | 35 | 11 | 2 | 0.7 | 9 | 52 | | | |
| (Southern elements 123) | | | | | | | | | | (Northern elements 108) | | | | | | | | | |

H. Christ stated in his "Geographie der Farne" that in southern Japan a few of the Indo-Malayan elements are found and the Chinese

elements predominate. This theory is quite in agreement with my opinion and more especially so in the case of Polypodiaceae. 52% of the ferns which are indigenous to Yakusima, are found in China.

From the above table we can see the phytogeographical relation of Yakusima to the northern and southern regions. So far as Polypodiaceous plants are concerned, the island is firstly related to Formosa and to the main land of Kyûsyû, secondly to Honsyû, and thirdly to Sikoku. According to my present knowledge, as regards Polypodiaceae, the island appears most closely related to the southern lands. When we compare the components of the floral elements of a certain region with those of other regions, we must be careful not to fall into error. For instance, when we wish to compare floral region A with B. and C. regions, etc., we say A.-region has a closer relation to B.-region, because B.-region has a larger number of elements possessed by A. than by C. and other regions. And if B.-region itself has a larger number of elements in it than C. and other regions, then one may accept for a fact that B.-region has more numerous representative elements of A.-region than the other regions provided the elements are homogeneously distributed. If we accept these fictions we are led to expect that the island possesses a larger number of elements of the southern regions (Formosa, Ryûkyû and etc.) than of those of the northern regions, because the former regions have larger number of Polypodiaceous plants than the latter. Considering the above table, the island seems to be situated at an intermediate point, since some of the northern elements, for example, some species of Polypodiaceae and others have their southern limit of habitat in this island, while some southern elements, Aspidiae and others have their northern limit in this island.

Gleicheniaceae

Gleicheniaceae, BL., Enum. Pl. Jav. II. p. 248 (1830); DIELS. in ENGL. u. PRANT., Nat. Pfl.-fam. I. iv. p. 350 (1898)

Syn. Gleichenae, R. BR., Prodr. Fl. Nov. Holl. p. 160 (1810); KAUL., Enum. Fil. p. 36 (1824)

Filices Sect. *Gleichenae*, LINDL., Introd. p. 315 (1830)

Filices, Subordo, *Gleicheniaceae*, BR. apud HOOK., Sp. Fil. I. p. 1 (1844); HOOK. et BAK., Syn. Fil. p. 11 (1865); BEDD., Handb. Fern. Brit. Ind. and Ceylon p. 1 (1883)

Dicranopteris, BERNHARDI, Schrad. Neu. Journ.

I^o pp. 26, 38 (1806); NAK., in Tokyo Bot. Mag. XLI. p. 690 (1927)

Syn. *Mertensia*, (non ROTH) WILLD., in Vet. Akad. Nya Handl. XXV. p. 163 (1804); SWARTZ, Syn. Fil. p. 163 (1806); WILLD., Sp. Pl. V. p. 71 (1810); HOOK., Gen. Fil. t. XXXIX. (1824); PRESL, Tent. Pt. p. 50 (1836); NAK., in Tokyo Bot. Mag. XXXIX. p. 177 (1925)

Platyzoma, R. BR., Prodr. Fl. Nov. Holl. p. 160 (1810)

Gleichenia, (non SM.) BL., Pl. Jav. II. p. 248 (1830); ENDL., Gen. Pl. I. p. 64 (1836) partim; BAK., in Hook. et Bak., Syn. Fil. p. 11 (1865) partim; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 352 (1900) p.p.; ROSENBL., Malay. Fern. p. 55 (1908), et Sup. I. p. 80 (Sect. *Mertensia*, 1916)

Sticheris, PRESL, Tent. Pt. p. 51 (1836)

Gleicheniastrum, PRESL, Abh. Böhm. Ges. V. 5. p. 338 (1848)

Hicriopteris, PRESL, Epim. Bot. p. 26 (1849)

Mesosorus, HASSKARL, Observ. Bot. Fil. Bogor. I. p. 2 (1856)

Dicranopteris dichotoma, BERNH., in Schrad. Neu. Journ. I. pt. 2. pp. 38, et 49, t. 3, f. 13 (1806) p.p.; NAK., in Tokyo Bot. Mag. XLI. p. 695 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 33 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 113 (1930)

Syn. *Polypodium dichotomum*, THUNB., Fl. Jap. p. 338 (1784)

Mertensia dichotoma, WILLD., in Vetens Akad. Nya Handl. XXV. p. 167 (1804); et Sp. Pl. V. p. 71 (1810); SWARTZ., Syn. Fil. p. 163 (1806) p.p.; SCHKUHR, Krypt. Gew. p. 150. t. 148 (1809); PRESL, Tent. Pterid. p. 51 (1836); NAK., in Tokyo Bot. Mag. XXXIX. p. 178 (1925)

Gleichenia dichotoma, HOOK., Sp. Fil. I. p. 12 (1846) partim, et in Kew Journ. IX. p. 333 (1857); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 181 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 203 (1876); HARRINGT., in Journ. Linn. Soc. XVI. 25 (1878); LUERSS., in Engl. Bot. Jahrb. IV. p. 365 (1883); BAK., in Journ. Bot. XXIII. p. 102 (1885); CHR., Farnk. Erd. p. 343 (1897)

Mesosorus dichotomus, HASSK., Obs. Bot. Fil. Bogor. I. p. 9 (1856)

Gleichenia dichotoma, l. *normalis*, METT., in Ann. Mus. Bot. Lugd. Bat. I. p. 50 (1863)

Gleichenia pectinata, (non SPR.) STEUDEL, Nom. p. 178 (1885) p.p.; MATSUM., Ind. Pl. Jap. I. p. 308 (1904)

Gleichenia linearis, (non C. B. CLARKE) CHR., Farnk. Erd. p. 343 (1897) p.p.; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 355 (1899) p.p.; MATSUM., Ind. Pl. Jap. I. p. 307 (1904) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 562 (1906); COPEL., in Philipp. Journ. Sc. IV. p. 25 (1909); MATH., in Journ. Linn. Soc. XXXIX. p. 369 (1911); NAK., in Tokyo Bot. Mag. XXVIII. p. 98 (1914); ROSENBL., Malay. Fern and Fernallies Supp. I. p. 83 (1917); MAK. et NEM., Fl. Jap. ed. 1. p. 1567 (1925); MERR., Enum. Hainan Pl. p. 19 (1927)

Nom. Jap. *Kosida*

Leg. Ipse, Jul. 25, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, Hainan, Indo-china, Himalaya, Polynesia.

Note. The plant is found in open lands from low altitudes up to about 100 m and common in southern Japan.

Dicranopteris glauca, NAK., in Tokyo Bot. Mag. XLI. p. 693 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 113 (1931)

Syn. *Polypodium glaucum*, HOUTT., Nat. Hist. XIV. p. 177 (1783)

Polypodium glaucum, THUNB. ex MURRAY, Syst. Veg. p. 938 (1784); THUNB., Fl. Jap. p. 338 (1784)

Mertensia glauca, WILLD., in Vet. Akad. Nya. Handl. XXV. p. 177 (1804); SWARTZ, Syn. Fil. p. 164 (1806); WILLD., Sp. Pl. V. p. 75 (1810); KUNZE, in Bot. Zeit. VI. p. 492 (1848); PRESL, Epim. Bot. p. 24 (1849); NAK., in Tokyo Bot. Mag. XXXIX. p. 178 (1925)

Gleichenia japonica, SPR., Syst. Veg. IV. p. 25 (1827); COPEL., in Philip. Journ. Sc. IV. p. 26 (1909)

Gleichenia glauca, (non SWARTZ) HOOK., Sp. Fil. I. p. 4 (1846); METT., in Ann. Mus. Bot. Lugd. Bat. I. p. 48 (1863); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 81 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 203 (1876¹); CHR., Farnk. Erd. p. 340 (1897), et in WARB. Mons. I. p. 92 (1903) p.p.; DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 353 (1898) p.p.; MATSUM., Ind. Pl. Jap. I. p. 306 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 562 (1906); ROSENB., Malayan Ferns, p. 58 (1908); MATH., in Journ. Linn. Soc. XXXIX. p. 368 (1911); NAK., in Tokyo Bot. Mag. XXVIII. p. 98 (1914); MAK. et NEM., Fl. Jap. ed. 1. p. 1567 (1925)

Gleichenia longissima, (non BL.) HOOK. et BAK., Syn. Fil. p. 11 (1865); MATSUM., Cat. Pl. Herb. Sci. Coll. Imp. Univ. p. 242 (1886)

Nom. Jap. *Uraziro*

Leg. Ipse, Aug. 11, 1929.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, Malay, India.

Note. The species grows in open lands from a low altitude up to about 1000 m and is common in southern Japan.

Dicranopteris laevisissima, NAK., in Tokyo Bot. Mag. XLI. p. 692 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 114 (1931)

Syn. *Gleichenia laevisissima*, CHR., in Bull. Acad. Int. Geogr. Bot. 3, sér. XI. p. 268 (1902); ROSENB., Malayan Ferns p. 795 (1908); COPEL., in Philipp. Journ. Sc. IV. p. 25, Pl. XIV. (1909)

Gleichenia kiusiana, MAK., in Tokyo Bot. Mag. XVIII. p. 139 (1904); MAK. et NEM., Fl. Jap. ed. 1. p. 1567 (1925)

Mertensia laevisissima, NAK., in Tokyo Bot. Mag. XXXIX. p. 182 (1925)

Nom. Jap. *Kanekosida*

Leg. Ipse, Wariisidake, Jul. 23, 1928.

Distr. Kyûsyû, China, Philippines.

Note. This plant is found in open lands in the Pseudosasa Owatarii Association at an altitude of about 1000 m. It is an interesting fact that this species has not yet been discovered in Formosa and in the Ryûkyû archipelago outside of Yakushima while it is reported in Luzon. This indicates that the species is an old one which might have once been widely distributed in these regions including Kyûsyû, Ryûkyû, Formosa, China, and the Philippines and at present, it is extinguished in Formosa and the Ryûkyûs.

Osmunda, (TOURN.) LINN., Sp. Pl. ed. 1. p. 1063 (1753) p.p., Gen. Pl. ed. 5. p. 484, n. 1036 (1754); JUSS., Gen. Pl. p. 15 (1789);

SWARTZ, Syn. Fil. XIII, pp. 7 et 160 (1806); WILLD., Sp. Pl. V. p. 96 (1810); LAM. et DE CANDOLLE, Fl. Fr. II. p. 568 (1815); BL., Enum. Pl. Jav. p. 252 (1830); ENDL., Gen. Pl. I. p. 65 n. 665 (1836); MILDE, Monogr. Gen. Osmund. p. 57 (1868); HOOK. et BAK., Syn. Fil. p. 426 (1868); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 378 (1900)

Syn. *Struthiopteris*, BERHARDI, in Schrad. Journ. 1800: p. 126 (1801)
Aphyllocalpa, CAVANILLES, Anal. Cienc. V. p. 164 (1802)
Plenasium, PRESL, Tent. Pterid. p. 109, t. III. f. 13 (1836)
Osmundastrum, PRESL, Abh. Bohm. Gesells. Wiss. V. 5, p. 526 (1848)

osmunda bromeliaefolia, COPEL., in Philipp. Journ. Sci. II. p. 147 (1907), et IV. p. 17 (1909); NAK., in Tokyo Bot. Mag. XLI. p. 675 (1927), et in Bull. Biogeogr. Soc. Jap. I. p. 250 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 115 (1931)

Syn. *Nephrodium bromeliaefolium*, PRESL, Reliq. Haenk. I. p. 33 (1825)
Plenasium? bromeliaefolium, PRESL, Tent. Pterid. p. 110 (1836)
Osmunda Presliana, J. SMITH, in Journ. Bot. III. p. 420 (1841); MILDE, Fil. Europ. and Atl. p. 185 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 250 (1876); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 397, f. 205-A. (1899) excl. syn.

Osmunda oxyodon, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 182 (1867)
Osmunda javanica, (non BL.) HOOK. et BAK., Syn. Fil. p. 426 (1868) p.p.; MATSUM., Cat. Pl. Herb. Coll. Sc. Imp. Univ. p. 243 (1886), et Ind. Pl. Jap. I. p. 331 (1904); CHR., in Bull. Herb. Boiss. IV. p. 675 (1896), et in WARB. Mons. I. p. 91 (1900); YABE, in Tokyo Bot. Mag. XVI. p. 52 (1902); MATSUM. et HAY., Enum. Pl. Formos. p. 560 (1906); ROSENBL., Malayan Ferns, p. 756 (1908)

Osmunda banksiaefolia, var. *bromeliaefolia*, KUNZE, in Ann. Mus. Bot. Lugd. Bat. IV. p. 299 (1869); MAK. et NAM., Fl. Jap. ed. 1. p. 1565 (1925)

Osmunda banksiaefolia, (non KUNZE), LUERSS., in Engl. Bot. Jahrb. IV. p. 365 (1883)

Nom. Jap. *Siroyama-zenmai*

Leg. Ipse, Yosida, Mart. 21, 1923.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines, Malay.

Note. Grows in the laurisilvae, along the forest edges; common in the southern parts of Japan.

Osmunda cinnamomea, LINN., Sp. Pl. ed. 1. p. 1066 (1753); SW., Syn. Fil. p. 160 (1806); WILLD., Sp. Pl. V. p. 98 (1810); MAXIM., in Mém. prés Acad. Sci. St. Pétersb. div. sav. IX. p. 136 (1856); HOOK., in Kew. Journ. Bot. IX. p. 361 (1857); MILDE, Fl. Europ. and Atl. p. 181 (1867), et Monogr. p. 93, t. V. f. 1-22, t. VI. f. 21 (1868); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 182 (1867); HOOK. et BAK., Syn. Fil. p. 426 (1868); FR. SCHM., Fl. Saghal. p. 205 (1868); FR. et SAV., Enum. Pl. Jap. II. p. 251 (1876); H. CHR., Farnk. Erd. p. 332 (1897); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 379 (1900); KOM., Fl. Mansh. I. p. 149 (1901); MATSUM., Ind. Pl. Jap. I. p. 331 (1904); COPEL., in Philipp. Journ. Sci. IV. p. 16 (1909); NAK., Fl. Kor. II. p. 418 (1911), et in Tokyo Bot. Mag. XLI. p. 676 (1927); MAK. et NEM., Fl. Jap. ed. 1. p. 1566 (1925), et ed. 2. p. 115 (1931); KUDO, Contr. Fl. Nor. Sagh. p. 16 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 35 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 43 (1930)

(43) (1901); YABE, in Tokyo Bot. Mag. XVII. p. 68 (1902); NAK., Fl. Kor. II. p. 419 (1911) p.p.; MASAMUNE, Prel. Rep. Veg. Yak. p. 35 (1929)

Osmunda biformis, MAK., in Journ. Jap. Bot. IV. p. 4 (1927)

Nom. Jap. *Zennai*

Leg. Ipse, ca. Hananoego, Jul. 24, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, Philippines, China, India.

Note. The species is found from the sea level up to an altitude of about 1500 m, in open lands, and is widely distributed in southern Japan.

From the above table, we can see that the island is less closely related to Okinawa, Amami-Ôsima and Tanegasima so far as the flora of this family is concerned.

Plagiogyriaceae

Plagiogyriaceae, BOWER. Fern. p. 275 (1926)

Syn. *Polypodiaceae-Pteridace-Cheilanthesinae*, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 265 (1899) p.p.

Plagiogyria, METT., in Abh. Senckenb. Nat. Gesells. II. p. 265, t. XV. (1858); BEDD., Fern. Brit. Ind. I. pp. 51-52 (1865); H. CHR., Farn. Erd. p. 175 (1897); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 281 (1899); ROSENB., Malay, Fern. p. 340 (1908)

Syn. *Olferia*, PRESL, Epim. Bot. p. 232 (1836) p.p.

Lomaria, Sect. *Plagiogyria*, KUNZE., Farnk. II. p. 61 (1850)

Plagiogyria euphlebia, METT., Abh. Senckenb. Nat. Gesells. II. p. 274 (1858); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 172 (1867); MAK., in Tokyo Bot. Mag. VIII. p. 334 (1894); DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 282 (1899); MATSUM., Ind. Pl. Jap. I. p. 332 (1904); ROSENB., Malayan Ferns p. 343 (1908); HAY., Mat. Formos. p. 443 (1911), et Ic. Pl. Formos. IV. p. 239 (1914); ROSENB., Malay, Fern. and Fernallies Supp. I. p. 510 (1917); MORI, Enum. Pl. Cor. p. 14 (1922); MAK. et NEM., Fl. Jap. ed. 1. p. 1640 (1925), et ed. 2. p. 83 (1931); NAK., in Tokyo Bot. Mag. XLII. p. 206 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929)

Syn. *Stenochlaena triquetra*, J. SMITH, in Hook. Journ. Bot. IV. p. 149 (1841) nom; PRESL, Epim. Bot. p. 165 (1849)

Lomaria euphlebia, KUNZE, in Bot. Zeit. VI. p. 521 (1848); HOOK., Sp. Fil. III. p. 20 (1860); HOOK. et BAK., Syn. Fil. p. 183 (1868) p.p.

Plagiogyria triquetra, METT., in Abh. Senckenb. II. p. 274 (1858); MATH., in Journ. Linn. Soc. XXXIX. p. 274 (1911)

Lomaria articulata, MUELLER, Frag. V. p. 187 (1866)

Nom. Jap. *Ô-kizimoo-sida*

Leg. Ipse, Jul. 3, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, China, Malay, New Guinea.

Note. Grows as undergrowth in the lauri-aciculisilvae, sometimes in clearings; common in southern Japan.

Plagiogyria japonica, NAK., in Tokyo Bot. Mag. XLII. p. 206 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929)

Syn. *Plagiogyria adnata*, (non BEDD.), LUERSS., in Engl. Bot. Jahrb. IV. p. 365 (1883); MAK., in Tokyo Bot. Mag. VIII. p. 333 (1894), et XXIII. p. 246 (1909); YABE, in Tokyo Bot. Mag. XVII. p. 97 (1903); MATSUM., Ind. Pl. Jap. I. p. 331 (1904); ROSENB., Malay. Ferns p. 342 (1908) Pl. ex Jap.; MAK. et NEM., Fl. Jap. ed. 1. p. 1640 (1925), et ed. 2. p. 83 (1931)

Plagiogyria euphlebia, (non KUNZE) HOOK., 2nd. Cent. t. 89 (1861); MATSUM. Shokubutsu Mei-i, I. p. 220 (1895)

Nom. Jap. *Kizinoosida*

Leg. Ipse, Jul. 16, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa.

Note. It is found as undergrowth in the laurisilvae or in the lauri-aciculisilvae, and is a common species in South Japan except Formosa.

Plagiogyria Matsumuraeana, MAK., in Tokyo Bot. Mag. VIII. p. 333 (1894); MATSUM., Ind. Pl. Jap. I. p. 332 (1904); TAKEDA, in Tokyo Bot. Mag. XXIV. p. 320 (1910); KODAMA, Ic. Pl. Koishik. II. pp. 119, 120, Pl. 144 (1915); NAK., in Tokyo Bot. Mag. XLII. p. 209 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 37 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 84 (1931)

Syn. *Lomaria Matsumuraeana*, MAK., in Tokyo Bot. Mag. VIII. p. 90 (1894)

Lomaria Fauriei, CHR., in Bull. Herb. Boiss. IV. p. 666 (1896)

Plagiogyria Fauriei, MATSUM., Ind. Pl. Jap. I. p. 332 (1904)

Blechnum Fauriei, TOKUBUCHI, in Tokyo Bot. Mag. XIX. p. (231) (1905)

Plagiogyria Fauriei, CHR., Ind. Fil. p. 495 (1906)

Nom. Jap. *Yamasotetu*

Leg. Ipse, Jul. 9, 1928.

Distr. Yezo, Honsyû, Sikoku.

Note. It grows in the lauri-aciculisilvae and has its southern limit of habitat in this island.

Plagiogyria stenoptera, DIELS, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 282 (1899); MATSUM., Ind. Pl. Jap. I. p. 332 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 615 (1906); ROSENB., Malay. Fern. p. 341 (1908); MAK., in Tokyo Bot. Mag. XXIII. p. 244 (1909); HAY., Ic. Pl. Formos. IV. p. 239 (1914); MAK. et NEM., Fl. Jap. ed. 1. p. 1641 (1925), et ed. 2. p. 84 (1931); NAK., in Tokyo Bot. Mag. XLII. p. 208 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 34 (1929)

Syn. *Blechnum stenopterum*, HANCE, in Journ. Bot. XXI. p. 268 (1883)

Lomaria concinna, BAK., in Journ. Bot. XXIII. p. 103 (1885), et in Hook. Ic. Pl. XVII. t. 1644 (1886)

Lomaria stenoptera, BAK., in Ann. Bot. V. p. 220 (1891); HENRY, List Pl. Formos. p. 111 (1896)

Plagiogyria Henryi, CHR., in Bull. Herb. Boiss. VII. p. 8 (1899)

Plagiogyria Matsumuraeana, (non MAK.) HAY., in Tokyo Bot. Mag. XXIII. p. 32 (1909) p.p.

Lomaria decurrens, BAK., in Kew. Bull. Misc. p. 9. (1906)

Nom. Jap. *Sima-yama-sotetu*

Leg. Ipse, Jul. 21, 1928.

Distr. Taiwan, China, Philippines.

Note. Grows as undergrowth in the lauri-aciculisilvae; has its northern limit in this island.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|-------|-------------------------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Osima | Tanegasima | Kydsyt Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Plagiogyria euphlebia</i> , METT. | | + | | | | | + | + | + | + | | |
| <i>Plagiogyria japonica</i> , NAK. | | | | + | + | | + | + | + | | | |
| <i>Plagiogyria Matsumuraeana</i> , MAK. | | | | | | | | + | + | | + | |
| <i>Plagiogyria stenoptera</i> , DIELS | + | + | | | | | | | | | | + |

The island is a meeting place for the species of *Plagiogyriaceae*; that is *Plagiogyria Matsumuraeana* has its southern limit while *P. stenoptera* has its northern limit in this island.

Lycopodiaceae

Lycopodiaceae, LAMARCK and DC., Syn. Fil. Gall. p. 116 (1806) p.p.; PRITZEL, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 563 (1900)

Syn. *Lycopodiaceae*, SW., Syn. Fil. p. 87 (1806)

Lycopodium, LINN., Sp. Pl. ed. 1. p. 1100 (1754) p.p.; PRITZEL, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 592 (1900); ROSENBERG, Malay. Fern. and Fernall. p. 27 (1915)

Lycopodium cernuum, LINN., Sp. Pl. ed. 1. p. 1103 (1753); SW., Syn. Fil. p. 178 (1806); WILLD., Sp. Pl. V. p. 30 (1830); SPRING, Monogr. Lycopod. I. p. 79 (1842); BENTH., Fl. Hongk. p. 436 (1861); MILDE, Fil. Europ. and Atl. p. 254 (1867); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 184 (1867); MAXIM., in Mém. Biol. VII. p. 341 (1870); FR. et SAV., Enum. Pl. Jap. II. p. 197 (1876); LUERSS., in Engl. Bot. Jahrb. IV. p. 366 (1883); BAK., Handb. Fern.-All. p. 23 (1887); HENRY, List Pl. Formos. p. 117 (1896); PRITZEL, in DIELS, Fl. Centr. Chin. p. 210 (1900), et in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 602 (1900); WARB., Mons. I. p. 97 (1900); MATSUM., Ind. Pl. Jap. I. p. 357 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 555 (1906); TAKEDA, in Tokyo Bot. Mag. XXIII. p. 211 (1909); ROSENBERG, Malay. Fern. and Fern.-All. p. 47 (1915) p.p.; MERR., Enum. Hainan Pl. p. 20 (1927);

MASAMUNE, Prel. Rep. Veg. Yak. p. 35 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 252 (1930); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 54 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 120 (1931)

Nom. Jap. *Mizusugi*

Leg. Ipse, Jun. 14, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines, Malay, Polynesia, India.

Note. It frequently grows in the wasteland at a low altitude and along the edges of forests and is abundant in tropical and subtropical regions.

Lycopodium chinense, CHR., in Nuov. Giorn. Bot. Ital. Nuov. Ser. IV. p. 101. t. III. f. 4 (1897), et in Bull. Herb. Boiss. VII. p. 824 (1899); PRITZEL, in DIELS, Fl. Centr. Chin. p. 210 (1900); KOM., Fl. Mansh. I. p. 157 (1901); TAKEDA, in Tokyo Bot. Mag. XXIII. p. 204 (1909), et Fl. Shikotan p. 498 (1914); HERTER, in Engl. Bot. Jahrb. Beibl. Nr. 98 p. 31 (1909), ut *sinense*; NAK., Fl. Kor. II. p. 422 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 35 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 52 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 120 (1931)

Syn. *Lycopodium Selago*, (non LINN.) BONGRD., Veget. de Sitch. p. 75 (1883) p.p.; CHR., in Bull. Herb. Boiss. IV. p. 675 (1896)

Lycopodium Miyoshianum, MAK., in Tokyo Bot. Mag. XII. p. 36 (1898); YABE, in Tokyo Bot. Mag. XVII. p. 69 (1903)

Lycopodium Selago, LINN. form. *chinense*, PRITZEL, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 593 (1900)

Lycopodium Selago, var. *Miyoshianum*, MAK., in Tokyo Bot. Mag. XVI. p. 199 (1902); MATSUM., Ind. Pl. Jap. I. p. 359 (1904)

Nom. Jap. *Hime-sugiran*

Leg. Ipse, Nagatadake, Jun. 1928.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. The species is found in the alpine region, and in the Pseudosasa Owatarii Association, and is not yet reported in lands further south than this island.

var. **Somai**, MASAMUNE.

Syn. *Lycopodium Somai*, HAY., Ic. Pl. Formos. V. p. 255 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 123 (1931)

Lycopodium yakusimense, MASAMUNE, Prel. Rep. Veg. Yak. p. 36 (1929)

Affinis *L. chinensis* sed folia rigida et breviora quam typica.

Nom. Jap. *Kosugi-tôge-siba*

Leg. Ipse, Jun. 12, 1928.

Distr. Taiwan.

Note. The variety is collected in wet ground in the Pseudosasa Owatarii Association.

Lycopodium clavatum, LINN. var. *Wallichianum*, SPRING, Monogr. Lycop. I. p. 90 (1842); NAK., in Tokyo Bot. Mag. XXXIX. p. 198 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 121 (1931)

Syn. *Lycopodium divaricatum*, WALL., Cat. n. 131 (1828); HOOK. et GREV., Enum. Filic. n. 76 (1833)

Lycopodium trichiatum, (non BORY) BL., Enum. Pl. Jav. II. p. 263 (1830)

Lycopodium clavatum, var. *nipponicum*, (non NAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 35 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 58 (1930) p.p.

Nom. Jap. *Nangoku-hikageno-kazura* (nov)

Leg. Ipse, Yaegadake, Aug. 18, 1928.

Distr. Yezo, Honsyû, Kyûsyû, Taiwan, Korea.

Note. The variety grows in open lands at high altitudes from about 700 to 1900 m, and is common in South Japan.

Lycopodium cryptomerianum, MAXIM., in Mél. Biolog. VII. p. 340 (1870); FR. et SAV., Enum. Pl. Jap. II. p. 195 (1876); BAK., Handb. Fern. All. p. 11. (1887); PRITZEL, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 594 (1900); MAK., in Tokyo Bot. Mag. XXII. p. (236) (1908); TAKEDA, in Tokyo Bot. Mag. XXIII. p. 208 (1909); MORI, Enum. Pl. Cor. p. 23 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 35 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 53 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 121 (1931)

Nom. Jap. *Sugiran*

Leg. Ipse, Kôbandake, Jul. 2, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. Epiphyte; I have found it on the trunks of *Tsuga Sieboldii*, and *Distylium racemosum* at about an altitude of 1600 m. The species is not found in lands further south than Yakusima, as far as I am aware.

Lycopodium obscurum, LINN., Sp. Pl. ed. I. p. 1102 (1753); BAK., Handb. Fern. All. p. 24 (1887) p.p.; PRITZEL, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 603 (1900); KOM., Fl. Mansh. I. p. 159 (1901) p.p.; MATSUM., Ind. Pl. Jap. I. p. 358 (1904) excl. syn. *L. japonicum*, THUNB.; HAY., Fl. Mont. Formos. p. 241 (1908); H. CHR., in Bull. Acad. Geogr. Bot. XX. p. 168 (1909); TAKEDA, in Tokyo Bot. Mag. XXIII. p. 211 (1909); NAK., Fl. Kor. II. p. 423 (1911) pro. maj. excl. syn. THUNB.; BRITT. and Br. III. Fl. I. p. 41 (1913); HULT., Fl. Kamtch. I. p. 61 (1927); MASAMUNE Prel. Rep. Veg. Yak. p. 35 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 55 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 122 (1931)

Syn. *Lycopodium dendroideum*, MICH., Fl. Bor. Amer. V. 2. p. 282 (1803); SWARTZ, Syn. Fil. p. 178 (1806); AITON, Hort. Kew. ed. 2. V. p. 493 (1813); HOOK., Exot. Fl. t. 7 (1823); SPRING., Monogr. Lycopod. II. p. 40 (1849); REEB., Fl. Ross. IV. p. 498 (1853); REGEL, Tent. Fl. Uss. p. 174 (1861); MIQ. in Ann. Mus. Bot. Lugd. Bat. III. p. 184 (1867) excl. Syn. THUNB.

Lycopodium japonicum, (non THUNB.) MAXIM., in Mél. Biolog. VII. p. 341 (1870); FR. et SAV., Enum. Pl. Jap. II. p. 197 (1876); MIY., Fl. Kuril. p. 272 (1890)

Nom. Jap. *Mannen-sugi*

Leg. Ipse, Kuromidake, Jun. 11, 1928.

Distr. Kamtchatka, Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, Manchuria.

Note. The species is found in lands from about 1500 m to 1900 m above the sea level, and is widely distributed in the northern regions of Japan.

Lycopodium Phlegmaria, LINN., Sp. Pl. ed. I. p. 1101 (1753); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 184 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 613 (1876); BAK., Fern. All. p. 22 (1887); MAK., in Tokyo Bot. Mag. XII. p. 13 (1898); MATSUM., Ind. Pl. Jap. I. p. 359 (1904); HAY., Mat. Fl. Formos. p. 412 (1911); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 357 (1912); ROSENBERG, Malay. Fern. All. p. 44 (1915) p.p.; MERR., Enum. Hainan Pl. p. 20 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 36 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 122 (1931)

Syn. *Lycopodium filiforme*, (non ROXB.) HAY., in MATSUM. et HAY., Enum. Pl. Formos. p. 555 (1906)

Lycopodium verticillatum, var. *filiforme*, HAY., in MATSUM. et HAY., Enum. Pl. Formos. p. 555 (1906)

Nom. Jap. *Yōraku-hiba*

Leg. Ipse, April. 2, 1927.

Distr. Amami-Ōsima, Okinawa, Taiwan, China.

Note. It grows as an epiphyte in the laurisilvae and has its northern limit of habitat in this island.

Lycopodium serratum, THUNB. f. *intermedium*, NAK., in Tokyo Bot. Mag. XXXIX. p. 196 (1925)

Syn. *Lycopodium serratum*, (non THUNB.) HOOK. et GREV., Ic. Fil. t. XXXVII. (1827); MATSUM. et HAY., Enum. Pl. Formos. p. 555 (1906); HAY., in Tokyo Bot. Mag. XX. p. 20 (1906), et Fl. Mont. Formos. p. 242 (1908)

Lycopodium serratum, var. *longepetiolatum*, SPRING, Monogr. Lycop. II. p. 18 (1849)

Lycopodium serratum, THUNB. var. *javanicum*, (non *L. javanicum*, SW.) MAK., in Tokyo Bot. Mag. XII. p. (13) (1898); MATSUM., Ind. Pl. Jap. I. p. 359 (1904); TAKEDA, in Tokyo Bot. Mag. XXIII. p. 207 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 36 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 123 (1931)

Lycopodium serratum, var. *intermedium*, NAK. MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 53 (1930)

Nom. Jap. *Tōge-siba*

Leg. Ipse, Jul. 12, 1928.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Taiwan.

Note. Grows as undergrowth on the humus ground from low altitudes up to almost 1000 m; a common species in Eastern Asia.

var. *Thunbergii*, MAK., in Tokyo Bot. Mag. XII. p. (12) (1896); MATSUM., Ind. Pl. Jap. I. p. 359 (1904); TAKEDA, in Tokyo Bot. Mag. XXIII. p. 203 (1896); NAK., Fl. Kor. II. p. 423 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 36 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 123 (1931)

Syn. *Lycopodium serratum*, THUNB., Fl. Jap. p. 341, t. 38 (1784); SW., Syn. Fil. p. 175 (1806); WILLD., Sp. Pl. V. p. 51 (1810); SPRING, Monogr. Lycop. II. p. 39 (1849); KUNTZE, in Bot. Zeit. VI. p. 587 (1848); FR. SCHM., Reise, Am. Saghal. p. 204 (1863); KOM., Fl. Mansh. I. p. 153 (1901)

Nom. Jap. *Hosoba-tōgesiba*

Leg. Ipse, Aug. 3, 1928.

Distr. Saghalien, Kuriles, Yezo, Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Taiwan, Korea, Manchuria.

Note. The species grows as undergrowth on humus ground in the lauri-aciculisilvae and is a common species in Japan.

Lycopodium Sieboldi, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 184 (1867); MAXIM., in Mém. Biolog. VII. p. 341 (1870); FR. et SAV., Enum. Pl. Jap. II. p. 196 (1876); BAK., Handb. Fern. All. p. 13 (1887); MATSUM., Ind. Pl. Jap. I. p. 359 (1904); NAK., Fl. Kor. II. p. 423 (1911); HAY., Ic. Pl. Formos. X. p. 72 (1921); MASAMUNE Prel. Rep. Veg. Yak. p. 36 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 123 (1931)

Nom. Jap. *Himoran*

Leg. Ipse, Jul. 23, 1924.

Distr. Honsyû, Kyûsyû, Taiwan, Korea.

Note. It grows as an epiphyte in the laurisilvae and in the lauri-aciculisilvae and is found on rare occasions in southern Japan.

Lycopodium sitchense, RUPER. var. **nikoense**, TAKEDA, in Tokyo Bot. Mag. XXIII. p. 221 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 36 1929; MIY. et KUDO, Fl. Hokk. and Sagh. I. p. 59 (1930)

Syn. *Lycopodium nikoense*, FR. et SAV., Enum. Pl. Jap. II. p. 198 1876

Lycopodium alpinum, var. **nikoense**, FR. et SAV., Enum. Pl. Jap. II. p. 613 1876; BAK., Handb. Fern. All. p. 27 (1887); MAK., in Tokyo Bot. Mag. XII. p. 33 (1898), et XVI. p. 193 (1902); PRITZEL, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 604 (1900); YABE, in Tokyo Bot. Mag. XVII. p. 16 1903; MATSUM., Ind. Pl. Jap. I. p. 357 (1904)

Lycopodium sabinaefolium, WILLD. var. **sitchense**, FENALD. subv. **nikoense**, KOIDZ., in Tokyo Bot. Mag. XL. p. 330 (1926); MAK. et MEM., Fl. Jap. ed. 2. p. 122 1931

Nom. Jap. *Takane-hikagenokazura*

Leg. Ipse, Yaegatake ca. 1800 m alt. Aug. 1928.

Distr. Saghalien, Yezo, Honsyû, Kyûsyû.

Note. The species is found in the alpine region from an altitude of 1600 m up to 1900 m in the Pseudosasa Owatarii Association. It is rather commonly distributed in the alpine regions of central and north Japan, but it is rare in Kyûsyû. It has its southern limit in this island, so this is one of the interesting elements that are found in the island.

Lycopodium subdistichum, MAK., in Tokyo Bot. Mag. XII. p. 37 1898; MATSUM. et HAY., Enum. Pl. Formos. p. 556 1906; MASAMUNE, Prel. Rep. Veg. Yak. p. 36 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 123 1931

Syn. *Lycopodium aloifolium*, non WALL. FR. et SAV., Enum. Pl. Jap. II. p. 169 1876

Nom. Jap. *Nankakuran*

Leg. Ipse, Nagata, Mart. 22, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. It grows as an epiphyte on tree trunks or on rocks in the laurisilvae or in the lauri-aciculisilvae, and it is rather common in South Japan.

Lycopodium tereticaule, HAY., Mat. Fl. Formos. p. 411 1911; MASAMUNE, Prel. Rep. Veg. Yak. p. 36 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 123 1931

Nom. Jap. *Hosohimo-yôrahukiba*

Leg. Ipse, Jul. 6, 1928.

Distr. Taiwan.

Note. As an epiphyte in the laurisilvae or in the lauri-aciculisilvae.

As several species of this family have their limit of habitat in this island, the elements of north and south intermingle in this island. I cannot decide whether the island belongs to the northern floral regions or not. But we can see from the table that a few of

| Names of Plants | Regions | | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|----------------------|------------|-------------|--------|--------|-------|-------------------------|-----------|------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū Prop | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Ussuri | China |
| <i>Lycopodium cernum</i> , LINN. | + | + | + | + | + | + | + | + | + | + | + | + | | | | + |
| <i>Lycopodium chinense</i> , CHR. | | | | | | | | + | + | + | + | + | + | | + | + |
| <i>L. c.</i> var. <i>Somai</i> , MASAMUNE | | | + | | | | | | | | | | | | | |
| <i>Lycopodium clavatum</i> , LINN. var. <i>Wallichianum</i> , SPRING | | | + | | | | | + | + | + | + | + | | | | |
| <i>Lycopodium cryptomerianum</i> , MAXIM. | | | | | | | | + | + | + | + | + | | | | |
| <i>Lycopodium obscurum</i> , LINN. | | | + | + | | | | + | + | + | + | + | + | + | + | |
| <i>Lycopodium Phlegmaria</i> , LINN. | | | + | + | + | | | | | | | | | | | + |
| <i>Lycopodium serratum</i> , THUNB. f. <i>intermedium</i> , NAK. | | | + | | + | | | + | + | + | + | + | | | | |
| <i>L. s.</i> var. <i>Thunbergii</i> , MAK. | | | + | | + | | | + | + | + | + | + | + | | + | |
| <i>Lycopodium Sieboldi</i> , MIQ. | | | + | | | | | + | | + | + | | | | | |
| <i>Lycopodium sitchense</i> , RUPER. var. <i>nikoense</i> , TAKEDA | | | | | | | | + | | + | + | + | | | | |
| <i>Lycopodium subdistichum</i> , MAK. | | | + | + | + | | + | + | + | + | | | | | | |
| <i>Lycopodium tereticaule</i> , HAY. | | | + | | | | | | | | | | | | | |
| Total | 13 | 1 | 1 | 10 | 4 | 5 | 2 | 10 | 8 | 10 | 6 | 8 | 4 | 1 | 3 | 3 |
| Percentage | | 8 | 8 | 77 | 31 | 38 | 15 | 77 | 62 | 77 | 46 | 62 | 31 | 8 | 23 | 23 |
| (Southern elements 10 | | | | | | Northern elements 10 | | | | | | | | | | |

the plants which are indigenous to Yakusima occur in Okinawa, Tanegasima, and in Amami-Ôsima. This fact can be explained by assuming that since those islands are comparatively small and have no high mountains and they lack several oecological conditions under which these plants exist. None the less the island of Yakusima has in respect of this family, some relation with the flora of the northern regions.

Selaginellaceae

Selaginellaceae, METT., Fil. Hort. Lips. p. 16 (1856) excl. *Isoetes*; G. HIERONYMUS, u. R. SADEBECK, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 621 (1900); ROSENB., Malay. Fern. All. p. 57 (1915)

Selaginella, SPRING, in Mém. Acad. Roy. Belg. p. 52 (1849); BAK., Handb. Fern. All. p. 31 (1887); G. HIERONYMUS, u. R. SADEBECK, in ENGL. u. PRANT. Nat. Pfl.-fam. I. iv. p. 669 (1900); ROSENB., Malay. Fern. All. p. 58 (1915)

Selaginella atroviridis, SPRING, Monog. II. p. 124 (1849); HARRING, in Journ. Linn. Soc. XVI. p. 34 (1877); BAK., Fern. All. p. 77 (1887); HENRY, List Pl. Formos. p. 115 (1896); WARB., Mons. I. p. 114 (1900); DIELS, in Engl. Bot. Jahrb. XXIX. p. 211 (1900); MATSUM., Ind. Pl. Jap. I. p. 360 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 552 (1906); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 359 (1912); ROSENB., Malay. Fern. All. p. 79 (1915); MASAMUNE, Prel. Rep. Veg. Yak. p. 36 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 124 (1931)

Syn. *Lycopodium atroviride*, WALL.; HOOK. et GREV., Ic. Fil. t. XXXIX. 1829

Nom. Jap. *Midori-katahira*

Leg. Y. KUDO! Nagata, Aug. 1907.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China, India.

Note. It grows as undergrowth in the laurisilvae from the sea level up to about 600 m, and is widely distributed in South Japan.

Selaginella caulescens, SPRING, Monogr. II. p. 158 (1849); FR. et SAV., Enum. Pl. Jap. II. p. 199 (1876); BAK., Handb. Fern. All. p. 94 (1887); HENRY, List Pl. Formos. p. 117 (1896); DIELS, in Engl. Bot. Jahrb. XXIX. p. 211 (1900); MATSUM., Ind. Pl. Jap. I. p. 361 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 552 (1906); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 359 (1912); ROSENB., Malay. Fern. All. p. 137 (1915); MORI, Enum. Pl. Cor. p. 24 (1922); MERR., Enum. Hainan Pl. p. 21 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 37 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 124 (1931)

Syn. *Lycopodium caulescens*, WALL., Cat. no. 137 (1828)

Nom. Jap. *Katahira*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa, Taiwan, Korea, China, India.

Note. As undergrowth on ground or on rocks in the laurisilvae and in the lauri-aculisilvae.

Selaginella integerrima, SPRING, Monogr. II. p. 79 (1849); BAK., Handb. Fern. All. p. 66 (1887); MASAMUNE, Prel. Rep. Veg. Yak. p. 37 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 124 (1931)

Nom. Jap. *Hime-kurama-goke*

Leg. Ipse, Aug. 31, 1926.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species grows on rocks in the laurisilvae or in the lauri-aculisilvae as undergrowth.

Selaginella japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 185 (1867); NAK., in Tokyo Bot. Mag. XXXIX. p. 202 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 125 (1931)

Syn. *Selaginella Kraussiana*, (non A. BR.) FR. et SAV., Enum. Pl. Jap. II. p. 200 (1876); BAK., Handb. Fern. All. p. 65 (1887) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 553 (1906); YABE, Enum. Pl. Manch. p. 7 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 37 (1929)

Nom. Jap. *Kuramagoke*

Leg. Ipse, Kosugidani, Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Manchuria.

Note. The species reaches its maximum flourishing point in the lauri-aculisilvae.

Selaginella Savatieri, BAK., in Journ. Bot. XXII. p. 87 (1884, et Handb. Fern. All. p. 66 (1887); MATSUM., Ind. Pl. Jap. I. p. 363 (1904); MASAMUNE, Prel. Rep. Veg. Yak. p. 37 (1929); YAMAZUTA, List Manch. Pl. p. 11 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 126 (1931)

Syn. *Selaginella denticulata*, (non LINK.) FR. et SAV., Enum. Pl. Jap. II. p. 198 (1876,

Nom. Jap. *Tati-kuramagoke*

Leg. Ipse, Jul. 7, 1928.

Distr. Honsyû, Sikoku, Tanegasima, Okinawa, Manchuria.

Note. The species is found as undergrowth in the lauri-aculisilvae.

| Names of Plants | Regions | | | | | | | | | | | | | | | | | | | |
|---|---------|-------------|--------|--------|---------|-------------|---------|----|-----|----|-----------------------|---|---|---|--|--|--|----|----|---|
| | | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| <i>Selaginella atroviridis</i> , SPRING | | | + | + | + | | | + | | | | | | | | | | | | + |
| <i>Selaginella caulescens</i> , SPRING | + | | + | + | + | + | | + | + | + | + | + | + | + | | | | | | + |
| <i>Selaginella integerrima</i> , SPRING | | | | | | | | + | + | + | + | | | | | | | | | |
| <i>Selaginella japonica</i> , MIQ. | | | | + | + | | | + | + | + | + | + | + | | | | | | + | |
| <i>Selaginella Savatieri</i> , BAK. | | | | | + | | | + | | + | + | | | | | | | | + | |
| Total | 5 | 1 | 3 | 4 | 2 | 3 | 4 | 3 | 4 | 4 | 5 | 1 | | | | | | 2 | 2 | |
| Percentage | 20 | 60 | 80 | 40 | 40 | 60 | 80 | 80 | 100 | 20 | | | | | | | | 40 | 40 | |
| (Southern elements 4) | | | | | | | | | | | (Northern elements 5) | | | | | | | | | |

There are some southern elements in this island, but in general

| Name of Plant | Regions | |
|--|---------------------------------|---------|
| | Philippines Bonins Taiwan | Ryûkyûs |
| Torreya nucifera, SIEB. et ZUCC. | Okinawa | Kyûsyû |
| | Amami-Ôshima | |
| | Tanegasima | |
| | Kyûsyû Prop. | |
| | Sikoku | |
| | Honsyû | |
| | Korea | |
| | Yezo & Southern Kuriles | |
| | Saghalien | |
| | Northern Kuriles & Kamtchatka | |
| | Manchuria, Amur & Usuri | |

Distr. Honsyû, Sikoku, Kyûsyû, Korea.

Note. It grows in the lauri-aciculisilvae but rather rarely, and has its southern limit of habitat in this island.

Torreya is not found in lands further south than Yakushima (I mean in Amami-Ôsima, Okinawa, and in Taiwan), so with regard to this family, the sea between Amami-Ôsima and Yakushima has a profound significance as a line of demarcation between phytogeographical regions.

Podocarpaceae

Podocarpaceae, F. W. NEGER, Die Nadelhöl. in Sammlung Goschen Nr. 355. pp. 23 et 31 1907 ; PILGER, in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 13. p. 164 (1926)

Podocarpus, L'HERIT, ex PERSOON, Synopsis, II. p. 580 1807 ; ENDL., Gen. Pl. n. 1800 (1836-40), et Syn. Conif. p. 205 (1847) ; L. C. et A. RICH., Conn. Bot. de Conif. p. 124 (1826) ; BENTH. et HOOK. f., Gen. Pl. III. p. 434 1880 ; O. KUNTZE, Rev. Gen. Pl. II. p. 798 1891 ; BAILL., Hist. Pl. XII. p. 40 1892 ; PILGER, in ENGL. Pfl.-reich. IV. 5. Heft. 18 p. 54 (1903), et in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 13. p. 240 1926

Podocarpus nagi, ZOLL. et MORITZ, ex MAK., in Tokyo Bot. Mag. XVII. p. 113 (1903) ; PILGER, in ENGL. Pfl.-reich. IV. 5. (Heft. 18 p. 60 (1903) ; DALLIM. and JACKSON, Handb. Conif. p. 52 (1923) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 38 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 134 (1931)

Syn. *Myrica Nagi*, THUNB., Fl. Jap. p. 76 (1784)

Nageia japonica, GAERTN., Fruct. et Sem. Pl. I. t. 39. p. 191 1788 p.p. ; WILLD., Sp. Pl. IV. p. 749 (1805) ; SPRENG., Syst. Veg. I. p. 455 1825 ; GORD. Pin. p. 137 1858 ; CARR., Conif. p. 635 (1867)

Podocarpus Nageia, R. BR., ex MIRBEL, in Mém. du Mus. Par. XIII. p. 75 1825 ; ENDL., Syn. Conif. p. 207 (1847) ; BL., Rumphia III. p. 217 (1847) ; PARLOT, in DC. Prodr. XVI. 2. p. 508 (1868) ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 168 (1867) ; STEB. et ZUCC., Fl. Jap. II. p. 71, t. 135 ed. Miq. 1870) ; MAXIM., in Mém. Biolog. VII. p. 562 (1870) ; FR. et SAV., Enum. Pl. Jap. I. p. 474 (1875) ; MASTER, in Journ. Linn. Soc. XVIII. p. 501 (1881) ; VEITCH., Man. Conif. p. 319 (1881) ; HENRY, List Pl. Formos. p. 91 (1896) ; MAK., in Tokyo Bot. Mag. XII. p. 257 (1898), et XVII. p. 113 (1903) ; SHIRASAWA, Ic. Ess. For. Jap. p. 30, t. XIII. ff. 1-12 (1899)

Agathis Dammara, ENGL., in Engl. Bot. Jahrb. IV. p. 353 (1883)

Potodocarpus japonica, SENILIS, Pinac. p. 155 (1866)

Nageia Nagi, KUNTZE, Rev. Gen. Pl. II. p. 798 (1891)

Nom. Jap. *Nagi*

Leg. Ipse, Yudomari, Jun. 22, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan.

Note In this island the species grows on the southern side of Yaegadake from the sea level up to an altitude of about 1000 m. It is rather common in South Japan.

Pinaceae

Pinaceae, LINDL., Nat. Syst. Bot. Sec. p. 313 (1836), et Veg. Kingd. p. 226 (1847) p.p;
PILG., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 13, p. 271 (1926)

Abies, A. DIETRICH, Flora Gegend Berl. p. 793 (1824); PILG., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 13. p. 312 (1926)
Syn. *Pinus*, Sec. *Abies*, ENDL., Syn. Conif. p. 112 (1847)

Abies firma, SIEB. et ZUCC., Fl. Jap. II. p. 15. t. 107, ed. MIQ. (1843); MURR., Pin. Jap. p. 53 (1863); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 166 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 467 (1875); MASTER, in Journ. Linn. Soc. Bot. XVIII. p. 514 (1831), et in Bull. Herb. Boiss. VI. p. 273 (1898); MAYR., Monogr. Abiet. p. 31 (1890); WARB., Mons. I. p. 189 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 5 (1905); BEISSN., Handb. Nadelholzk. ed. 2. p. 143 (1909); SHIRAZAWA, Ic. For. Tr. Jap. I. p. 19. Pl. VI. ff. 1-21 (1911); DALLIM. and JACKSON, Hand. Conif. p. 89, f. 17 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 39 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 137 (1931)

Syn. *Abies Momi*, SIEB., in Verh. Bat. Gen. XII. p. 12 (1830); KOCH., Dendr. II. p. 227 (1873)

Pinus firma, ANTOINE, Conif. p. 70, t. 27 (1840-47); ENDL., Syn. Conif. p. 99 (1847); PARL., in DC. Prodr. XVI. 2. p. 424 (1868) excl. Syn.

Abies bifida, SIEB. et ZUCC., Fl. Jap. II. p. 18 t. 109 (1843)

Picea firma, GORDON, Pinet. p. 147 (1858)

Abies holophylla, MAXIM., in Mém. Biolog. VI. p. 22 (1866)

Pinus holophylla, PARL. in DC., Prodr. XVI. 2. p. 424 1868

Nom. Jap. *Momi*

Leg. Ipse, Kosugidani, Mart. 19, 1923.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species has its southern limit of habitat in this island, and "Sititonada" should be recognized as the sea which prevents the distribution of this species.

Tsuga, CARR. Conif. ed. 1. p. 185 (1855); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 440 (1880); EICHLER, in ENGL. u. PRANT. Nat. Pfl.-fam. II. i. p. 80 (1889); PILGER, in id. ed. 2. p. 319 (1926)

Syn. *Tsuga*, (Sect. *Pinus*) ENDL., Syn. Conif. p. 83 (1847)

Micropeuce, GORDON, Pinet. Supp. p. 13 (1862)

Tsuga Sieboldii, CARR., Conif. p. 186 (1855), et ed. 2. p. 245 (1867); MASTERS, in Journ. Linn. Soc. XVIII. p. 512 (1881), et in Bull. Herb. Boiss. VI. p. 273 (1898); MAYR., Monogr. Abiet. p. 59 (1890); WARB., Mons. I. p. 189 (1900); MATSUM., Ind. Pl. Jap. I. p. 20 (1905); BEISSN., Handb. Nadelholzk. ed. 2. p. 80 (1909); SHIRAZAWA, Ic. For. Tr. Jap. II. p. 12, Pl. 4, ff. 16-33 (1912); MORI, Enum. Pl. Cor. p. 29 (1922); DALLIM. and JACKSON, Handb. Conif. p. 537 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 39 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 153 (1931)

Syn. *Abies Arayagi*, SIEB. in Verh. Batav. Gen. XII. p. 12 (1830)

Abies Tsuga, SIEB. et ZUCC., Fl. Jap. II. p. 14, t. 106 (1843), ed. MIQ.; FR. et SAV., Enum. Pl. Jap. I. p. 468 (1875)

Pinus tsuga, ANTOINE, Conif. p. 83. f. 2. (1846); ENDL., Synop. Conif. p. 83. (1847)

Tsuga Tsuja, A. MURRAY, in Proc. Hort. Soc. Lond. II. p. 508 (1862)

Nom. Jap. *Tsuga*

Leg. Ipse, Kosugidani, Sept. 4, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Korea.

Note. The species grows on granite rocks, and in the lauri-aciculisilvae. It has its southern limit of habitat in this island. Not only this species, but also genus *Tsuga* have not yet been found in Amami-Ôsima and Okinawa.

Pinus, LINN., Sp. Pl. ed. 1. p. 1000 (1753); DC., Prodr. XVI. 2. p. 377 (1868); BENTH. et HOOK. f., Gen. Pl. III. I. p. 438 1880; EICHLER, in ENGL. u. PRANT. Nat. Pfl.-fam. II. i. p. 70 (1880); MASTERS, in Journ. Linn. Soc. Bot. XXVII. pp. 227-328, XXXV. p. 560 (1904); BEISSN., Handb., Nadelholzk. ed. 2. p. 340 (1909); PILGER, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 13. p. 331 (1926)

Syn. *Subgenus Pinus*, ENDL., Syn. Conif. p. 137 (1847); PARL., in DC. Prodr. XVI. 2. p. 378 1868

Pinus amamiana, KOIDZ., in Tokyo Bot. Mag. XXXVIII. p. 113 1924; MASAMUNE, Prel. Rep. Veg. Yak. p. 39 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 147 1931

Syn. *Pinus Armandi*, non FR. WILS., Conif. and Tax. Jap. p. 20 1916 p.p.; MASAMUNE, in Journ. Trop. Agr. II. p. 31 1930

Nom. Jap. *Yakusima-goyô*

Leg. Ipse, Jun. 15, 1928.

Distr. Tanegasima.

Note. It grows on the southern side of the island at an altitude of 300 m up to 500 m in the lauri-aciculisilvae. The pine is restricted to this island and to Tanegasima.

Pinus densiflora, SIEB. et ZUCC., Fl. Jap. II. p. 22, t. 112 1843; ENDL., Syn. Conif. p. 172 1847; MURRAY, in Pines and Firs. Jap. p. 32, ff. 55-68 1863; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 165 1867; FR. et SAV., Enum. Pl. Jap. I. p. 464 1875; MASTERS, in Journ. Linn. Soc. XVIII. p. 503 1881; MAYR., Monogr. Abiet. Jap. p. 72, t. 5, f. 17 1890; SARGENT, Forest Fl. Jap. p. 79 1893; SHIRAZAWA, Ic. Ess. For. Jap. I. p. 10, t. 1, ff. 1-14 1899; MATSUM., Ind. Pl. Jap. II. I. p. 13 1905; BEISSN., Handb. Nadelholzk. ed. 2. p. 437 (1909); NAK., Fl. Kor. II. p. 380 1911; WILS., Conif. and Tax. Jap. p. 25 1916; MIURA, List Pl. Manch. and Mong. p. 17 1925; REHDER, Manual Cult. Trees and Shrub. p. 59 1927; MASAMUNE, Prel. Rep. Veg. Yak. p. 39 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 148 (1931)

Syn. *Pinus japonica*, FORB., Pinet. Woburn. p. 33 1839

Pinus rubra, non LAMB. MICHAUX, MILLER, nec MIQ., SIEBER, ex GORD. Pinet. Supp. p. 58 (1862)

Nom. Jap. *Akamatu*

Leg. Ipse, Wariisidake, Jul. 25, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. In the island, the pine grows on the southern side of the Yaegadake, where the granite has been exposed by land slides and by other geographical agencies. It has its southern limit in this island.

Pinus Thunbergii, PARLATORE, in DC. Prodr. XVI. 2. p. 383 1863; MASTERS, in Journ. Linn. Soc. XVIII. p. 504 (1831), in Bull. Herb. Boiss. V. p. 272 1893; et in Journ. Linn. Soc. Lond. XXXV. p. 629 1904; FR., Pl. Dav. I. p. 285 1831; MAYR., Monogr. Abiet. Jap. p. 69, t. 5, f. 16 (1890); SARGENT, For. Fl. Jap. p. 79

portant meaning to Pinaceae so far as phytogeography as well as zoogeography are concerned.

Taxodiaceae

Taxodiaceae, F. W. NEGER, Die Nadelhölzer und übrigen Gymnospermen pp. 24, et 127 (1907); PILGER, in ENGL. u. PRANT., Nat. Pfl.-fam. 2. auf. B. 13. p. 165 (1926)

Cryptomeria, D. DON, in Trans. Linn. Soc. VIII. p. 166, t. 13, f. 1. (1839; SIEB. et ZUCC., Fl. Jap. II. pp. 41-54, tt. 124, 124-b. ed. Miq. (1844); HOOK., Ic. Pl. VII. t. 668 (1844); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 428 (1830); WILS, Conif. and Tax. Jap. p. 66 (1916); PILG., in ENGL. u. PRANT., Nat. Pfl.-fam. 2. auf. B. 13. p. 355 (1926)

Cryptomeria japonica, D. DON, in Trans. Linn. Soc. XVIII. p. 166 t. 13, f. 1 (1841); HOOK., Ic. Pl. VII. t. 668 1844; SIEB. et ZUCC., Fl. Jap. II. p. 43, tt. 124, 124-b. (1844), et Fl. Jap. Fam. Nat. II. p. 234 1846; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 168 (1867; FR. et SAV., Enum. Pl. Jap. I. p. 469 1875; MASTERS, in Journ. Linn. Soc. XVIII. p. 497 (1831, XXVI. p. 544 (1902), et p. 413 (1905); SARGENT, For. Fl. Jap. p. 74, t. 24 1894; MATSUM., Ind. Pl. Jap. II. 1. p. 9 (1905); MAYR, Frendl. Wald. u. Parkb. p. 278 (1906; SHIRASAWA, Ic. For. Tr. Jap. I. p. 29. Pl. 9. ff. 25-42 (1911; REHDER and WILS, in SARGENT Pl. Wils. II. p. 52 1914; WILS., Conif. and Tax. Jap. p. 66 1916; DALLIM. and JACKSON, Handb. Conif. p. 180 (1923; REHDER, Manual Cult. Tree. Shrub. p. 26 (1927; MASAMUNE, Prel. Rep. Veg. Yak. p. 39 (1929; GROFF, in Lingn. Sci. Journ. IX. p. 289 1930; MAK. et NEM., Fl. Jap. ed. 2. p. 14' (1931

Syn. *Cupressus japonica*, LINN., f., Supp. p. 421 (1781

Taxodium japonicum, BRONGNIART, in Ann. Sc. Nat. Ser. I. XXX. p. 183 (1833

Cryptomeria Fortunei, OTTO et DIETRICH, Allg. Gartenz. p. 234 1853

Cryptomeria Lobbiana, BILLAIN, in OTTO et DIETRICH, Allg. Gartenz. p. 234 (1853)

Cryptomeria nigricans, CARR., in Rev. Hort. p. 119 (1870-71

Nom. Jap. *Sugi*

Leg. Ipse, Jul. 12, 1928.

Dist. Honsyû, Sikoku, Kyûsyû, Southern China?

Note. The *Cryptomeria* is the most useful, popular, and noblest tree of all the Japanese conifers. Many famous places, such as the shrines of Ise, the monumental avenues at Nikko, the magnificent grove at Hikosan in Prov. Buzen, the charming avenue up to Sano Shrine in Hiuga Province and so on, owe much of their beauty to the stately and impressive features of this conifers, or "*Sugi*". But the above mentioned beauty is a gift of man while the noblest beauty of the scenery of the natural forest of the conifers in our island is really a gift of nature and defies comparison with any other forest beauty that I have ever seen. The forest is not a pure stand of *Cryptomeria japonica*, but is associated with *Abies firma*, *Tsuga Sieboldii*, *Chamaecyparis obtusa*, *Bobua myrtaceae*, *Trochodendron aralioides*, *Distylium racemosum*, *Stewartia monadelphæ*, *Camellia japonica*, var. *macrocarpa*, *Tetrademia foliosa* *Machilus Thunbergii*, and *Rhododendron Tashiroi*, etc. The *Cryptomeria* or "*Sugi*" has been extensively planted in many parts of our Empire since ancient times, so it is a difficult problem to ascertain whether the "*Sugi*" forests in Japan are natural or artificial but it seems

to be an accepted fact that the plant is distributed over Honsyû, Sikoku, Kyûsyû, (i.e. so-called Japan proper,) and that Yakusima is the southern limit of habitat of this plant. In the island Cryptomeria forests mostly occur on granite, rather sparsely on mesozoic rocks from 300 m up to 1800 m above the sea level, where cloudy skies, damp weather prevail and abundant rainfall is recorded throughout the year. The species is not found in Amami-Ôsima, Okinawa, and Formosa. I would like therefore to suggest that WATASE's line denotes a significant fact in phytogeography as in zoogeography when this species is considered.

| Name of Plant | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|--------|--------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea |
| <i>Cryptomeria japonica</i> , DON | | | | | | | | + | + | + | | |
| | | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |

Cryptomeria is the sole representative of Taxodiaceae in Yakusima and from the distribution of this genus, we conclude that the island is included among the northern districts (Honsyû, Sikoku, Kyûsyû) and has no relation with the southern districts (Amami-Ôsima, Okinawa, and Formosa).

Cupressaceae

Cupressaceae. F. W. NEGER, Die Nadelhölz. und ubrigen Gymnospermen, pp. 24, 139 (1907 ; PILGER, in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 13. p. 165 '1926,

Chamaecyparis, SPACH, Hist. Nat. Phan. XI. p. 329 (1842 ; ENDL., Syn. Conif. p. 60 (1847) ; BEISSN., Handb. Nadelholzk. ed. 2. p. 528 (1909 ; PILG., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 13, p. 393 '1926) *Syn. Retinispora*, SIEB. et ZUCC., Fl. Jap. II. p. 36, tt. 121-123 '1844

Chamaecyparis obtusa, SIEB. et ZUCC., apud Endl., Syn. Conif. p. 63 (1847 ; CARR., Conif. p. 136 (1855 ; FR. et SAV., Enum. Pl. Jap. I. p. 471 (1875 ; SARGENT, For. Fl. Jap. p. 73 (1893) ; SHIRAZAWA, Ic. Ess. For. Jap. I. p. 32, t. 10, ff. 17-32 (1899) ; MATSUM., Ind. Pl. Jap. II. 1. p. 7 (1903) ; MAYR., Fremdl. Wald. u. Parkb. p. 277, t. 5. f. 4 (1906 ; BEISSN., Handb. Nadelholzk. ed. 2. p. 554, f. 141 (1909) ; WILS., Conif. and Tax. Jap. p. 76 (1916) ; REHDER, Manual Cult. Tree. Shrub. p. 18

From the above table it will be clear that Yakusima is more

closely related to Kyûsyû than to the southern lands from the standpoint of the phytogeography of the Cupressaceae. From this fact we may conclude that WATASE's line of zoogeography does in effect in divide the Flora of Japan.

ANGIOSPERMAE

DICOTYLEDONEAE

Archichlamydeae

Saururaceae

Saururaceae, LINDL., Nat. Syst. ed. 2. p. 184 (1835); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. 11 (1889)

Saururus, [PLUM. ex LINN. Gen. ed. I. p. 103 (1737)] et Sp. Pl. ed. 1. p. 311 (1753); ENDL., Gen. Pl. n. 1824 (1835-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 127 (1830); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. 1. p. 2 (1889)

Syn. *Spathium*, LOUR., Fl. Cochinch. p. 217 (1790)

Mattuschkia, J. F. Gmel., Syst. II. p. 533 (1791)

Saururopsis, TURCZ., in Bull. Soc. Nat. Moscou XXI. 1. p. 533 (1849)

Saururotus, TURCZ. ex ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 2 (1887)

Saururus chinensis, BAIL., Adansonia X. p. 69 (1850-69), et Hist. Pl. III. p. 467 (1857-69); C. DC., in Lecomte, Fl. Ind. Chin. V. 1. p. 59 (1910); MERR., Enum. Hainan Pl. p. 57 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 63 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 155 (1929)

Syn. *Saururus cernu*, 'non LINN. THUNB., Fl. Jap. p. 154 (1734); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 216 (1833)

Spathium chinense, LOUR., Fl. Cochinch. p. 217 (1790)

Saururus Loureiri, DECNE, in Ann. Soc. Nat. 3^{me} sér. III. p. 102 (1845); FORB. et HEMSL., Ind. Fl. Sin. II. p. 363 (1831); MATSUM. et HAY., Enum. Pl. Formos. p. 344 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 1 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 220 (1912); MORI, Enum. Pl. Cor. p. 107 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 156 (1931)

Saururopsis chinensis, TURCZ., in Bull. Soc. Nat. Mosc. XXI. 1. p. 59 (1848); C. DC., Prodr. XVI. p. 239 (1859)

Nom. Jap. *Hangesyô*

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, China.

Note. The species grows on somewhat wet ground near the sea level.

Houttuynia, THUNB., Fl. Jap. pp. 12, 234, t. 26 (1784); ENDL., Gen. Pl. n. 1825 (1836-40); DC., Prodr. XVI. 1. p. 238 (1869);

Piperaceae, C. RICH., in HUMBOLDT, BONPLAND et KUNTH, Nov. Gen. et Sp. I p. 46
(1815)

Piper, [LINN., Gen. ed. 1. p. 333] et Sp. Pl. ed.

1. p. 23 (1753); ENDL., Gen. Pl. n. 1820 (1836-40); DC., Prodr. XVI. 1. p. 240 (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 129 (1830); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 6 (1899)

Syn. *Quebitea*, AUBL., Hist. Pl. Gui. Franc. II. p. 838 (1775)

Piperiphorum, NECK. Elem. II. p. 294 (1791)

Peperidia, KOSTEL, Allg. Med.-pharm. Fl. II. p. 455 (1833)

Amalago, RAF., Sylv. Tellur. p. 84 (1838)

Suensonia, GAUDICH, ex MIQ., Syst. Piperac. p. 375 (1843-44)

Caulobryon, KLOTZSCH, ex DC., Prodr. XVI. 1. p. 240 (1869)

Piperi, ST.-LAG. in Ann. Soc. Bot. Lyon VII. p. 132 (1830)

Piper futo-kadzura, SIEB., in SIEB. et ZUCC., Fl. Jap. Fam. Nat. II p. 231 (1846) nom. nud. excl. Syn. MIQ.; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 139 (1867); DC., Prodr. XVI. 1. p. 346 (1869); FR. et SAV., Enum. Pl. Jap. I. p. 443 (1875); MAXIM., in Mém. Biolog. XII. p. 532 (1835); FORB. et HEMSL., Ind. Fl. Sin. II. p. 365 (1891); MATSUM. et HAY., Enum. Pl. Formos. p. 346 (1905); MATSUM., Ind. Pl. Jap. II. 2. p. 2 (1912); MORI, Enum. Pl. Cor. p. 107 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 63 (1929); NAK., Fl. Sylv. Kor. XVIII. p. 7, t. 1 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 157 (1931)

Nom. Jap. *Hitô-kadzura*

Leg. Y. KUDO¹ Nagata, Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa, Taiwan, Korea.

Ncte. The species flourishes in the laurisilvae near the sea level.

Peperomia, RUIZ. et PAV., Fl. Peruv. et Chil.

Prodr. p. 8 (1794); ENDL., Gen. Pl. n. 1820 (1836-40); DC., Prodr. XVI. 1. p. 392 (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 132 (1830); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 10 (1839)

Syn. *Troxirum*, RAF., Sylv. Tellur. p. 85 (1838)

Micropiper, MIQ., in Bull. Néerl. p. 447 (1839)

Acrocarpidium, MIQ., Syst. Piperac. p. 51 (1843-44)

Erasmia, MIQ., in Instit. Versl. et Mëdd. p. 81 (1813)

Peperomia japonica, MAK., in Tokyo Bot. Mag. XV. p. 145 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 2 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 63 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 156 (1931)

Syr. *Peperomia portulacodes*, non DIETR.) MAK., in Tokyo Bot. Mag. I. p. 189 (1837), et III. Fl. Jap. II. Pl. 10 (1838)

Nom. Jap. *Sadasô*

Leg. Ipse, Onoaida, Sept. 9, 1926.

Distr. Sikoku, Kyûsyû, Amami-Ôsima, Okinawa.

Note. The species grows as undergrowth on rocky ground near the seashore.

Piperaceous plants abound in the tropical and subtropical regions, and the presence of a few representatives in the island show that the island has some relation to the southern lands. But these indigenous species being also found in the southern part of Honsyû,

Chloranthus ilicifolius, BL., ex MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 129 (1867) p.p.

Chloranthus glaber, MAK. in Tokyo Bot. Mag. XXVI. p. 335 1912 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 63 1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 158 (1931)

Nom. Jap. *Senryô*

Lcg. Ipse, Yosida, Mart. 21, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Indo-china, Malay, India.

Note. The species is found in the lauri-aciculisilvae.

In this family the island shows no special affinity either with the north or with the south.

Salicaceae

Salicaceae, LINDL., Nat. Syst. ed. 2. p. 183 1835

Salix, [TOURN. ex LINN., Syst. ed. 1. 1735 ; LINN., Gen. Pl. ed. 1. p. 301 1737] et Sp. Pl. ed. 1. p. 1015 1753 ; ENDL., Gen. Pl. n. 1903 1835-40 ; ANDERS., in DC. Prodr. XVI. 2. p. 191 1833 , BENTH. et HOOK. f., Gen. Pl. III. 1. p. 411 1833 , PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 36 (1839).

Syr. *Amerina*, RAF., Alsogr. Amer. p. 15 (1833)

Diplma, RAF., Alsogr. Amer. p. 13 (1833)

Helix, DUMORT., ex STUED., Nom. ed. 2. I. p. 745 1840

Salix pseudokoreensis, KOIDZ., in Tokyo Bot. Mag. XL. p. 346 1926 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 64 (1929)

Nom. Jap. *Nise-kôrai-yanagi*

Lcg. Ipse, Yudomari, April. 2, 1927.

Distr. Honsyû, Kyûsyû, Amami-Ôsima

Note. The willow is found by running water in wet fields or ricefields, but rarely.

| Name of Plant | Regions | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | China |
| <i>Salix pseudokoreensis</i> , KOIDZ. | | | | | + | | + | + | | |

Morella rubra, LOUR., Fl. Cochinch. p. 548 (1790)

Nom. Jap. *Yamamomo*

Leg. Ipse, Kosugidani, Jul. 22, 1927.

Dist. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa, Taiwan, Korea, China, Philippines, India, Malay.

Note. The species is found in the laurisilvae or in the lauri-aciculisilvae.

The Myricaceae have only one representative in the island which is widely distributed in South Japan.

Juglandaceae

Juglandaceae, LINDL., Nat. Syst. ed. 2. p. 180 (1813)

Syn. *Juglandae*, DC., Théor. Elém. p. 215 (1813)

Juglans, [LINN., Gen. Pl. ed. 1. p. 291 (1737)]

et Sp. Pl. ed. 1. p. 997 1753.; ENDL., Gen. Pl. n. 5890 (1836-40; DC. Prodr. XVI. 2. p. 135 1854; BENTH., in BENTH. et HOOK. f., Gen. Pl. III. 1. p. 398 (1830; ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 24 (1889); LEMÉE, Dict. Gen. Pl. Phan. III. p. 823 (1931

Syn. *Nux*, TOURN. ex ADANS., Fam. II. p. 497 1763,

Juglans Sieboldiana, MAXIM., in Mém. Biolog. VIII. p. 633 1872; FR. et SAV., Enum. Pl. Jap. I. p. 453 1875; DIPPEL, Handb. Laubholz. II. p. 321 (1892; SCHNEID., III. Handb. Laubholz. I. p. 91. f. 47, d-i, 1906 et II. p. 875, f. 547, a-a' 1912; DODE, in Bull. Soc. Dendr. France, N° XI. p. 31 1909; SHIRAZAWA, Ic. For. Tree Jap. II. p. 15, Pl. 5. ff. 16 29 (1912; MIY. et MIYAK., Fl. Saghal. p. 403 (1915); MIY. et KUDO, Ic. Ess. For. Tr. Hokk. Fasc. VII. p. 65. t. 20 (1922); MASAMUNE, Prel Rep. Veg. Yak. p. 64 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 177 (1931,

Nom. Jap. *Onigurum*:

Leg. Ipse, Kusugawa, Jul. 13, 1928.

Dist. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû.

Note. The plant is found along streams at low altitudes, but rarely. It is not yet found in lands further south than this island.

| Name of Plant | Regions | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Honsyû | China |
| <i>Juglans Sieboldiana</i> , MAXIM. | | | | | | | + | + | + | + | |

Considering the above table we can see that the flora of Yakusima is closely related to northern floral regions.

Betulaceae

Petulaceae, C. A. AGARDH, Aphor. p. 203 (1825) partim; A. BR., in ASCHERSON, Fl. Prov. Brondenburg. I. pp. 62, et 618 (1864)

Carpinus, [LINN., Gen. ed. 1. p. 292 (1737)]
et Sp. Pl. ed. 1. p. 998 (1753); SCOP., Fl. Carn. ed. 2. II. 243 (1773); JUSS., Gen. Pl. p. 409 (1789); ENDL., Gen. Pl. 2. n. 1843 (1836-40); DC., Prodr. XVI. 2. p. 125 (1864); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 405 (1880); PRANTL, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 42 (1889); DIPPEL, Handb. Laubholz. II. p. 139 (1892); WINKLER, in ENGL. Pfl.-reich, IV. 61 (Heft. 19) p. 24 (1904)

Syn. *Carpinum*, RAF., in Amer. Monthly Magaz. p. 268 (1818)

Distegocarpus, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 226. t. III. 3 (1846)

Carpinus laxiflora, BL., Mus. Bot. Lugd. Bat. I. p. 309 (1851); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 121 (1863); FR. et SAV., Enum. Pl. Jap. I. p. 451 (1875); MAXIM., in Mém. Biol. XI. p. 315 (1881), et in Bull. Acad. St. Pet. XXVII. p. 536 (1882); SARGENT, in Garden et Forest VI. p. 364 (1893), et For. Fl. Jap. p. 64 (1894); FORB. et HEMSL., Ind. Fl. Sin. II. p. 501 (1899); SHIRAZAWA, Ic. Ess. For. Jap. I. p. 48, t. 25, ff. 15-30 (1900), et Ic. For. Tree. Jap. I. p. 78, Pl. 25 (1911); DIELS, in Engl. Bot. Jahrb. XXIX. p. 280 (1900); WINKLER, in Engl. Pfl.-reich. IV. 61 (Heft 19) p. 33 (1904); SCHNEID., Ill. Handb. Laubholz. I. p. 138, f. 76 i. (1906), et II. p. 894, ff. 558 c, 559 f-g (1912), et in SARGENT Pl. Wilson. II. p. 438 (1916); NAK., Fl. Kor. II. p. 205 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 21 (1912); MERR., Enum. Hainan Pl. p. 60 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 187 (1931)

Syn. *Distegocarpus laxiflora*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. no. 799 (1846); DC., Prodr. XVI. 2. p. 128 (1864)

Nom. Jap. *Akaside*, *Soronoki*

Leg. Ipse, Tatyûdake, Jul. 22, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. The species is found in the lauri-aciculisilvae from about 500 m up to 1800 m above the sea level. It is not yet found in lands further south than this island in Japan.

Alnus, [TOURN. ex LINN. Syst. ed. 1 (1735), Fl. Lappon. p. 260 (1737)] GAERTN., Fruct. et Sem. II. p. 54, t. 90 (1791); REGEL, in DC., Prodr. XVI. 2. p. 180 (1868); BAILL., Hist. Pl. VI. p. 254 (1877); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 404 (1880); PRANTL, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 45 (1889); DIPPEL, Handb. Laubholz. II. p. 145 (1892); WINKLE, in ENGL. Pfl.-reich. IV. 61 (Heft 19) p. 101 (1904); LEMÉE, Dic. Gen. Pl. Phan. I. p. 166 (1929)

Alnus firma, SIEB. et ZUCC. var. *Sieboldiana*, WINKL, in Engl. Pfl.-reich. IV. 61. (Heft 19) p. 104 f. D-G. (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 16 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 64 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 180 (1931)

Syn. *Alnus Sieboldiana*, MATSUM., Rev. Aln. Sp. Jap. p. 3. t. 1 (1902)

Alnus firma, SHIRASAWA, Ic. For. Tree. Jap. II. p. 33, pl. 12. ff. 1-20 (1912);
SARGENT, Pl. Wilson. II. p. 503 (1916), partim.

Nom. Jap. *Yasya'usi*

Leg. Ipse, Aug. 1, 1924.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is found in somewhat open and sunny spots from about 800 m up to 1800 m above the sea level. It has its southern limit in this island.

| Names of Plants | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|---------|------------|--------|--------|--------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Ryûkyûs | Tanegasima | Kyûsyû | Sikoku | Honsyû |
| | | | | | | | | | | |
| <i>Carpinus laxiflora</i> , BL. | | | | | | | + | + | + | + |
| <i>Alnus firma</i> , SIEB. et ZUCC. | | | | | | | + | + | + | + |
| var. <i>Sieboldiana</i> , WINKL. | | | | | | | | | | |

Both representatives of *Betulaceae* in this island have their southern limit of habitat in this island. From this fact, we can see that the flora of Yakusima is more closely related to the northern regions than to the southern floral regions so far as this family is concerned.

Fagaceae

Fagaceae, A. BR., in ASCHERSON, Fl. Prov. Brandenburg I. pp. 62, 615 (1864)

Castanea, [TOURN., ex LINN. Syst. ed. 1. 1735]

P. MILLER, Gard. Dict. ed. 7 (1759); ADANS., Fam. II. p. 375 (1763); GAERTN., Fruct. Sem. I. p. 181, t. 37 (1788); ENDL., Gen. Pl. n. 1848 (1836-40); DC., Prodr. XVI. 2. p. 113 (1864); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 409 1880, PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 54 (1889); SCHNEID., Ill. Handb. Laubholz. I. p. 156 (1906); LEMÉE, Dict. Gen. Pl. Phan. I. p. 867 (1929)

Syn. *Castanophorum*, NECK., Elem. Bot. III. p. 257 (1790); *Casanophorum* emend STEUD.

Castanea crenata, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 224 (1846); DIPPEL, Handb. Laubholz. II. p. 56. f. 23 (1892); KOIDZ., in Tokyo Bot. Mag. XXX. p. 99 (1916), et XL. p. 338 (1926); MIY. et KUDO, Ic. Ess. For. Tr. Hokk. II. p. 3, t. 33 (1925);

MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 190 (1931)

Syr. *Fagus castanea*, (non LINN.) THUNB., Fl. Jap. p. 195 (1781)

Castanea vesca, (non GAERTN.) BL., Bijdr. I. p. 524 (1825)

Castanea vesca, var. *pubinervis*, HASSK., Cat. Pl. Hort. Bogr. p. 73 (1844) nomen.

Castanea chinensis, (non SPRG.) HASSK., Catal. Pl. Hort. Bogr. p. 73 (1844)

Castanea stricta, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 225 (1846)

Castanea japonica, BL., Mus. Bot. Lugd. Bat. I. p. 284 (1850)

Castanea japonica, var. *crenata*, (SIEB.) BL., Mus. Bot. Lugd. Bat. I. p. 285 (1850)

Castanea vulgaris, var. *elongata*, *subdentata*, DC., Prodr. XVI. 2, p. 115 (1864)

Castanea sativa, var. *japonica*, ITO, in Tokyo Bot. Mag. XIV. p. 18 (1900)

Castanea pubinervis, (HASSK.) C. K. SCHN., Ill. Handb. Laubholz. I. p. 158 f. 91 t. (1906)

Castanea sativa, var. *pubinervis*, MAK., in Tokyo Bot. Mag. XXIII. p. 12 (1909); NAK., Fl. Kor. II. p. 210 (1911)

Nom. Jap. *Kuri*

Leg. Jul. 21, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. The tree is found in somewhat open lands near the sea level.

Shiia, MAK., in Journ. Jap. Bot. V. p. 23 (1928);

KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 13 (1932)

Syn. *Pasaniopsis*, KUDO, Nipp. Yu. Zyumoku. ed. 1. p. 134 (1921); MAK., Journ. Jap. Bot. V. p. 19 (1928)

Shiia cuspidata, MAK., in Journ. Jap. Bot. V. p. 23 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 205 (1931)

Syn. *Quercus cuspidata*, THUNB., Fl. Jap. p. 176 (1784); DC., Prodr. XVI. 2. p. 103 (1864); SIEB. et ZUCC., Fl. Jap. I. p. 8. t. 2. (1835); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 117 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 449 (1875); SKAN., in FORB. et HEMSL., Ind. Fl. Sin. II. p. 510 (1899)

Pasania cuspidata, OERST., in Kjoeb. Vidensk. Meddel. p. 84 (1866); NAK., Fl. Kor. II. p. 207 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 24 (1912) p.p.

Pasania cuspidata et *Thunbergii*, MAK. in Tokyo Bot. Mag. XXIII. p. 141 (1909)

Castanopsis cuspidata, SCHOTT., in Engl. Bot. Jahrb. XLVII. p. 625 (1912)

Lithocarpus cuspidata, NAK., in Tokyo Bot. Mag. XXIX. p. 55 (1915) p.p.

Synaedrys cuspidata, KOHDZ., in Tokyo Bot. Mag. XXX. p. 186 (1916)

Pasaniopsis cuspidata, KUDO, Nipp. Yu. Zyumoku. ed. 1. p. 134 (1921), et ed. 2. p. 131 (1930)

Nom. Jap. *Kozii*

Leg. Ipse, April. 1, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Korea.

Note. The species is found as a representative of the trees in the laurisilvae and in the lauri-aciculisilvae, from the sea level up to about 500 m.

Shiia lutchuensis, (KOIDZ.) MASAMUNE, in Tokyo Bot. Mag. XLIV. p. 405 (1930)

Syn. *Lithocarpus lutchuensis*, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 3 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 195 (1931)

Nom. Jap. *Ryūkyū-zii*

Leg. Ipse, Aug. 11, 1928.

Distr. Kyūsyū, Amami-Ōsima, Okinawa.

Note. The species grows in the laurisilvae near the sea level.

Shiia Sieboldi, MAK., in Journ. Jap. Bot. V. p. 23 (1928 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 205 (1931)

Syn. *Pasania cuspidata*, OERST. var. *Sieboldi*, MAK., in Tokyo Bot. Mag. XXIII. p. 141 (1909)

Pasania Sieboldi, MAK., in Tokyo Bot. Mag. XXIV. p. 232 (1910)

Lithocarpus cuspidata, NAK., in Tokyo Bot. Mag. XXIX. p. 55 (1915)

Synaedrys Sieboldii, KOIDZ., in Tokyo Bot. Mag. XXX. p. 187 (1916)

Pasaniopsis Sieboldii, KUDO, Nipp. Yu. Zyumoku. ed. 1. p. 134 (1921), et ed. 2. p. 132 (1930 ; MAK., in Journ. Jap. Bot. V. p. 19 1928

Nom. Jap. *Sii*

Leg. Ipse, ca. Nakama, Mart. 21, 1923.

Distr. Honsyū, Sikoku, Kyūsyū, Korea (Quelp.)

Note. The species is found in the same places as the previous species of the genus *Shiia*.

Kuromateia, KUDO in Trans. Nat. Hist. Soc.

Formos. XX. p. 162 (1930)

Kuromateia glabra, KUDO, in Trans. Nat. Hist. Soc. Formos. XX. p. 163 (1930)

Syn. *Quercus glabra*, (non THUNB.) SIEB. et ZUCC., Fl. Jap. I. p. 170, t. 89 (1841) ; BL., Mus. Bot. Lugd. Bat. I. p. 289 (1850 ; DC., Prodr. XVI. 2. p. 82 (1861) ; FR. et SAV., Enum. Pl. Jap. I. p. 447 (1875)

Quercus glabra, var. *sublepidota*, BL., Mus. Bot. Lugd. Bat. I. p. 239 (1850)

Quercus edulis, MAK., in Tokyo Bot. Mag. XI. p. 38 (1897)

Pasania edulis, MAK., in Tokyo Bot. Mag. XI. p. 39 (1897 , et in XIV. p. 185 (1900), et XX. p. 43 (1905 ; MATSUM., Ind. Pl. Jap. II. 2. p. 24 (1912)

Pasania glabra, (non OERST.) MATSUM., in Tokyo Bot. Mag. XII. p. 2 (1893) excl. syn.

Synaedrys edulis, KOIDZ., in Tokyo Bot. Mag. XXX. p. 195 (1916)

Lithocarpus edulis, (MAK.) REHDER, in Journ. Arn. Arb. I. p. 125 (1919) ; KUDO, Nipp. Yu. Zyumoku. ed. 2. p. 135, f. 29 1930 ; MAK. et NEM., Fl. Jap. ed. 2. p. 193 (1931)

Lithocarpus sublepidota, KOIDZ., in Tokyo Bot. Mag. XL. p. 339 (1926) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929)

Nom. Jap. *Mateba-sii*

Leg. Ipse, Sept. 1, 1931.

Distr. Kyūsyū, Tanegasima, Amami-Ōsima.

Note. The plant grows from the sea level up to almost 400 m.

Cyclobalanopsis, OERST, in Kjoeb. Vidensk.

Meddel. p. 77 (1866) ; KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 15 (1932)

Syn. *Quercus*, Sect. *Cyclobalanopsis*, PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 55 (1839) ; KING., in Ann. Roy. Bot. Gard. Calcutt. II. p. 27 (1839)

Cyclobalanopsis acuta, OERST, in Kjoeb. Vidensk. Meddel. p. 78 (1835) ; SCHOTTKY in Engl. Bot. Jahrb. LXVII. p. 652 (1912)

Syn. *Quercus acuta*, THUNB., Fl. Jap. p. 175 (1784); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 225 (1846); BL., Ann. Mus. Bot. Lugd. Bat. I. p. 299 (1850); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 115 (1863); FR. et SAV., Enum. Pl. Jap. I. p. 448 (1875); MATSUM., in Tokyo Bot. Mag. IV. p. 75 (1890); DIPPEL, Handb. Laubholz. II. p. 126 (1892); YABE, in Tokyo Bot. Mag. XVII. p. 175 (1903); MATSUM. et HAY., Enum. Pl. Formos. p. 392 (1906); KUDO, Nipp. Yu. Zyumoku. ed. 1. p. 156 (1921), et ed. 2. p. 152, f. 40 (1930); MORI, Enum. Pl. Cor. p. 118 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 196 (1931)

Quercus Buergeri, BL., in Mus. Bot. Lugd. Bat. I. p. 299 (1850)

Quercus laevigata, BL., in Mus. Bot. Lugd. Bat. I. p. 304 (1850)

Nom. Jap. *Akagasi*

Leg. Ipse, Aug. 27, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea.

Note. The oak is found in the laurisilvae or in the lauri-aciculisilvae, from the sea level up to about 1300 m.

Cyclobalanopsis glauca, OERST., in Kjoeb. Vidensk. Medd. XVIII. p. 78 (1866); SCHOTTKY, in Engl. Bot. Jahrb. LXVII. p. 655 (1912); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 16 (1932)

Syn. *Quercus glauca*, THUNB., Fl. Jap. p. 175 (1784); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 226 (1846); BL., Mus. Bot. Lugd. Bat. I. p. 289 (1850); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 115 (1863); DC., Prodr. XVI. 2. p. 100 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 448 (1875); HOOK. f., Fl. Brit. Ind. V. p. 604 (1838); SKAN, in Journ. Linn. Soc. XXVI. p. 515 (1899); SHIRASAWA, Ic. Ess. For. Tree. Jap. I. p. 56, t. 30, ff. 13-24 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 392 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 27 (1912); NAK., in Tokyo Bot. Mag. XXIX. p. 61 (1915); MORI, Enum. Pl. Cor. p. 119 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 199 (1931)

Nom. Jap. *Aragasi*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. I have not found this species in the island, but Dr. KUDO told me that he once found it.

Cyclobalanopsis Miyagii, KUDO et MASAMUNE, in Trans. Nat. Hist. Formos. XX. p. 161 (1930)

Syn. *Quercus Miyagii*, KOIDZ., in Tokyo Bot. Mag. XXVI. p. 167 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 200 (1931)

Nom. Jap. *Okinawa-urazirigasi*

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Distr. Amami-Ôsima, Okinawa.

Note. The oak is found in the laurisilvae. The plant is not yet reported in lands further north than this island, and the species is restricted to the Ryûkyû Archipelago.

Cyclobalanopsis myrsinaefolia, OERST., in Vidensk. Selsk. V. 9. p. 379 (1875); SCHOTTKY, in Engl. Bot. Jahrb. LXXVII. p. 656 (1912)

Syn. *Quercus myrsinaefolia*, BL., Mus. Bot. Lugd. Bat. I. p. 305 (1850); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 117 (1863); DC., Prodr. XVI. 2. p. 107 (1864);

FR. et SAV., Enum. Pl. Jap. I. p. 449 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 28 (1912; MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 20) (1931)

Nom. Jap. *Hosoba-gasi*

Leg. Ipse, Issô, Mart. 21, 1923.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. I once found several individuals of this tree in the laurisilvae.

Cyclobalanopsis stenophylla, SCHOTTKY, in Engl. Bot. Jahrb. LXVII. p. 657 (1912)

Syn. *Quercus glauca*, var. *stenophylla*, BL., Mus. Bot. Lugd. Bat. I. p. 303 (1850; FR. et SAV., Enum. Pl. Jap. I. p. 448 (1875)

Quercus stenophylla, MAK., in Tokyo Bot. Mag. XXIV. p. 17 (1910; MORI, Enum. Pl. Cor. p. 121 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 203 (1931)

Nom. Jap. *Uraziro-gasi*

Leg. Ipse, Aug. 1931.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea.

Note. It is found in low altitudes as a member of the laurisilvae.

Quercus, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 934 (1753 p.p.; SCHOTT., in Engl. Bot. Jahrb. XLVII. p. 630 (1912); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 16 (1932)

Quercus acutissima, CARR., in Journ. Linn. Soc. VI. p. 33 (1832; MORI, Enum. Pl. Cor. p. 119 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 65 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 197 (1931)

Syn. *Quercus serrata*, (non THUNB. SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 226 (1846; MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 105 (1853; FR. et SAV., Enum. Pl. Jap. I. p. 447 (1875; KOM., Fl. Mansh. II. p. 74 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 29 (1912); KUDO, Nipp. Yu. Zyumoku. p. 139 (1921), et ed. 2. p. 144 (1930; CHUNG, Cat. Tree. and Shrub. Chin. p. 29 (1924)

Quercus glandulifera, BL., in Mus. Bot. Lugd. Bat. I. p. 295 (1850)

Nom. Jap. *Kunugi*

Leg. Ipse, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria, China.

Note. The species occurs on rare occasions, and grows near the sea level, and has not been reported in Okinawa and Formosa.

Quercus Wrightii, NAK., in Journ. Arn. Arb. V. p. 75 (1921); MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 204 (1931)

Nom. Jap. *Simaubamegasi*

Leg. Ipse, April. 2, 1927.

Distr. Tanegasima.

Note. It is found in somewhat sunny and dry waste lands near the sea level. The oak is restricted to this island and Tanegasima.

Cyclobalanopsis Miyagii, *Shiia lutchuensis* are the Ryûkyû elements; *Quercus Wrightii* is an endemic element to Yakusima and Tanegasima; *Castanea crenata*, *Quercus acutissima*, *Shiia cuspidata* are northern elements which are mainly distributed in Kyûsyû,

| Names of Plants | Regions | | | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|---------|--------------|------------|--------------|--------|--------|--------|-------|-------------------------|-----------|------------------------------|-------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Ryūkyūs | Amami-Oshima | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Usuri | China |
| <i>Castanea crenata</i> , SIEB. et ZUCC. | | | | | | | | + | + | + | + | + | + | | | | |
| <i>Shiia cuspidata</i> , MAK. | | | | + | | | | + | + | + | + | + | | | | | |
| <i>Shiia lutchuensis</i> , (KOIDZ.) MASAMUNE . . | | | | + | + | | | + | | | | | | | | | |
| <i>Shiia Sieboldi</i> , MAK. | | | | | | | | + | + | + | + | | | | | | |
| <i>Kuromateia glabra</i> , KUDO | | | | | + | | + | + | | | | | | | | | |
| <i>Cyclobalanopsis acuta</i> , OERST. | | + | + | | | | + | + | + | + | + | + | | | | | |
| <i>Cyclobalanopsis glauca</i> , OERST. | | + | + | + | | | + | + | + | + | + | + | | | | | + |
| <i>Cyclobalanopsis Miyagii</i> , KUDO et MASAMUNE | | | | + | + | | | | | | | | | | | | |
| <i>Cyclobalanopsis myrsinaefolia</i> , OERST. . . . | | | | | | | | + | + | + | + | | | | | | + |
| <i>Cyclobalanopsis stenophylla</i> , SCHOTT. . . . | | | | | + | | + | + | + | + | + | + | | | | | |
| <i>Quercus acutissima</i> , CARR. | | | | | | | | + | + | + | + | + | | | | + | + |
| <i>Quercus Wrightii</i> , NAK. | | | | | | | + | | | | | | | | | | |
| Total | 12 | 2 | 5 | 5 | 5 | 6 | 10 | 8 | 8 | 7 | 1 | | | | | 1 | 3 |
| Percentage | | 17 | 42 | 42 | 50 | 83 | 67 | 67 | 58 | 8 | | | | | | 8 | 25 |

(Southern elements 7)

(Northern elements 11)

Sikoku and Honsyû, and the remainining members are distributed rather widely in South Japan. From these facts it will be understood that the island has some close relations with the northern regions.

Ulmaceae

Ulmaceae, MIRB., Elém. II. p. 905 (1815); PLANCH., in DC. Prodr. XVII. p. 151 (1873)

Celtis, [TOURN., ex. LINN. Gen. Pl. ed. 1. p. 337 (1737)] et Sp. Pl. ed. 1. p. 1043 (1753); PLANCHON, in DC. Prodr. XVII. p. 168

(1873); ENDL., Gen. Pl. n. 1851 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 354 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 63 (1889); LEMÉE, Dict. Gen. Pl. Phan. II. p. 7 (1930)

Syn. *Colletia*, SCOP., Introd. p. 207 (1777)

Sauvobroma, RAF., Sylva, Tellur. p. 32 (1838)

Celtis boninensis, KOIDZ., in Tokyo Bot. Mag. XXVII. p. 183 (1913); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 256 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 206 (1931)

Syn. *Celtis sinensis*, (non PERS.) MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929) p.p.

Nom. Jap. *Kuwanoha-enoki*

Leg. Ipse, Jul. 28, 1927.

Distr. Okinawa, Bonins.

Note. It is an interesting fact that this Bonin element is distributed from Ryūkyū to this island. The species is found at low altitudes.

Celtis sinensis, PERS. var. *japonica*, NAK., in Tokyo Bot. Mag. XXVIII. p. (264) fig. 1. ee, fig. 2. ee, (1914¹), et Fl. Sylv. Kor. XIX. p. 64, t. 24 (1932)

Syn. *Celtis sinensis*, (non PERS.) WILLD., Baumz. ed. 2. p. 81 (1811); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 197 (1866); MAXIM., in Mém. Biolog. IX. p. 27 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 431 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 450 (1894) p.p.; NAK., Fl. Kor. II. p. 192 (1911), et in MATSUM. Ic. Pl. Koishik. I. 3, Pl. II. f. 2 (1914); SCHNEIDER, in SARGENT, Pl. Wils. III. 2. p. 277 (1916) p.p.; MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929) p.p.; MAK. et NEM., Fl. Jap. ed. 2. p. 207 (1931)

Celtis Willdenowiana, SCHULT., Syst. Veg. VI. p. 305 1820; SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 222 (1846)

Celtis japonica, PLANCHON, in DC. Prodr. XVII. p. 172 (1873¹); MORI, Enum. Pl. Cor. p. 121 (1922)

Nom. Jap. *Enoki*

Leg. Ipse, April 18, 1927.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōshima, Okinawa, Korea, China.

Trema, LOUR., Fl. Cochinch. p. 562 (1790 ;

BENTH. et HOOK. f., Gen. Pl. III. 1. p. 355 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 65 (1889)

Syn. *Sponia*, COMM., ex LAM. Encycl. IV. p. 139 (1796)

Trema orientalis, BL., Mus. Bot. Lugd. Bat. II. p. 62 (1856); HOOK. f., Fl. Brit. Ind. V. p. 484 (1888); FORB. et HEMSL., Ind. Fl. Sin. II. p. 451 (1894); MATSUM., Ind. Pl. Jap. II. 2. p. 32 (1912); MERR., Enum. Philipp. Pl. II. p. 34 (1923), et Enum. Hainan Pl. p. 62 (1927); HANDEL-MAGZ., Symb. Sin. VII. p. 106 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 207 (1931)

Syn. *Celtis orientalis*, LINN., Sp. Pl. ed. 1. p. 1044 (1753)

Sponia velutina, PLANCH., in Ann. Sc. Nat. Bot. III. 10, p. 327 (1848); MIQ., Fl. Ind. Bat. I. 2. p. 216 (1859); BENTH., Fl. Hongk. p. 324 (1861)

Trema blancoi, BL., Mus. Bot. Lugd. Bat. II. p. 58 (1856)

Sponia amboinensis, (non BL.) MIQ., Fl. Ind. Bat. I. 2. p. 216 (1859); DECNE., in DC. Prodr. XVII. p. 198 (1873)

Fatoua pilosa, (non GAUD.), SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 219 (1846); MATSUM. et HAY., Enum. Pl. Formos. p. 372 (1906); MORI, Enum. Pl. Cor. p. 124 (1922)

Fatoua japonica, BL., in Mus. Bot. Lugd. Bat. II. t. XXXVIII. (1856)

Fatoua aspera, (non GAUD.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 192 (1867)

Fatoua pilosa, var. *subcordata*, BUREAU, in DC. Prodr. XVII. p. 256 (1873) p.p.; FR. et SAV., Enum. Pl. Jap. I. p. 434 (1875); MATSUM. et HAY., Enum. Pl. Formos. p. 372 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 35 (1912)

Nom. Jap. *Kuwakusa*

Leg. Ipse, Aug. 2. 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa, Taiwan, Korea.

Note. The species is found in waste lands or by the roadside at low altitudes.

Morus, [TOURN., ex LINN. Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 986 (1753); ENDL., Gen. Pl. n. 1856 (1836-40); BUREAU, in DC. Prodr. XVII. p. 237 (1873); BAILL., Hist. Pl. VI. p. 190 (1877); BENTH. et HOOK. f. Gen. Pl. III. 1. p. 364 (1880); ENGL., in ENGL. u PRANT. Nat. Pfl.-fam. III. i. p. 72 (1889); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 571 (1932); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 22 (1932)

Syn. *Morophorum*, NECK., Elem. III. p. 255 (1790)

Diceras, RUDOLPHI, Entoz. Hist. Nat. II. p. 258 (1810); ENDL., Gen. Pl. Supp. II. p. 30 (1842)

Ditrachyceros, ENDL., Gen. Pl. Supp. II. p. 30 (1842)

Morus bombycis, KOIDZ., in Tokyo Bot. Mag. XXIX. p. 313 (1915), et in Bull. Imp. Sericult. p. 210, t. VI. ff. 1-2, t. VII. f. 1. (1916), et in Tokyo Bot. Mag. XXXI. p. 36 (1917); MORI, Enum. Pl. Cor. p. 124 (1922); MIURA, List Pl. Manch. and Mong. p. 112 (1925); MIY. et KUDO, Ic. Ess. For. Hokk. XIV. t. 41 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 219 (1931); NAK., Fl. Sylv. Kor. XIX. p. 98. t. XXIX. A. et XXX (1932)

Syn. *Morus indica*, (non LINN.) THUNB., Fl. Jap. p. 76 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 198 (1866)

Morus japonica, SIEB., in Verh. Bat. Genoot. XII. p. 27 (1830); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 219 (1846) nom.

Morus alba, var. *stylosa*, BUREAU, in DC. Prodr. XVII. p. 243 (1873) p.p.; SHIRASAWA, Ic. Ess. For. Tree. Jap. II. t. VI. ff. 1-11. (1908); MATSUM., Ind. Pl. Jap. II. 2. p. 40 (1912); MIY. et MIYAK., Fl. Sagh. p. 407 (1915)

Morus alba, var. *indica*, (non BUREAU) FR. et SAV., Enum. Pl. Jap. I. p. 433 (1875)

Morus longistyla, (non SERING) DIELS, in Notes Roy. Bot. Gard. Edingb. XXV. p. 293 (1910)

Morus acidosa, (non GRIFF.) SCHNEID., in SARGENT. Pl. Wils. III. p. 297 (1916); REHDER, Manual. p. 197 (1927)

Nom. Jap. *Yamaguwa*

Leg. Ipse, Onoaida Aug. 1927.

Distr. Saghalien, Yezo, Honsyû, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species is found in open lands in the laurisilvae and in the lauri-aculisilvae.

- Proussonetia**, L'HERIT, ex VENTENAT, Tabl. Regn. Veg. III. p. 547 (1799); ENDL., Gen. Pl. n. 1858 (1836-40); BUREAU, in DC. Prodr. XVII. p. 223 (1873); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 361 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 76 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 687 (1929); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 23 (1932)
- Syn.** *Papyrius*, POIRET, in Lam., Ill. III. p. 352, Pl. IV. t. 762 (1798)
- Stenochasma*, MIQ., Pl. Jungh. I. p. 45 (1851)

Broussonetia papyrifera, (L'HERIT) in VENTENAT, Tabl. Regn. Veg. III. p. 547 (1799); WILLD., Sp. Pl. IV. 2. p. 743 (1806); AITON, Hort. Kew. ed. 2. V. p. 372 (1813); SIMONS, in Curtis's Bot. Mag. t. 2358 (1823); SIEB., in Verh. Bat. Genoot. XII. p. 28 (1830); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 220 (1846); BL., Mus. Lugd. Bat. II. p. 85 (1849); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 198 (1865); KOCH, Dendrol. II. 1. p. 439 (1872); BUREAU, in DC. Prodr. XVII. p. 224 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 433 (1875); HOOK. f., Fl. Brit. Ind. V. p. 490 (1888); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 76, ff. 54-55 (1889); DIPPEL, Handb. Laubholz. II. p. 16 (1892); KOEHN, Deutsch. Dendr. p. 139 (1893); FORB. et HEMSL., Ind. Fl. Sin. II. p. 455 (1894); SHIRASAWA, Ic. Ess. For. Tree. Jap. I. t. 38 (1900); SCHNEID., Ill. Handb. I. p. 241, ff. 151, e-g, a-c, g-m. 156, i-o (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 373 (1906); NAK., Fl. Kor. II. p. 193 (1911), et Fl. Sylv. Kor. XIX. p. 106 t. XXXIV. (1932); ASCHERSON et GRAEBN., Syn. Mitteleup. Fl. IV. p. 583 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 35 (1912); SCHNEIDER, in SARGENT, Pl. Wils. II. p. 303 (1916); REHDER, Manual. p. 199 (1927); MERR., Enum. Hainan Pl. p. 62 (1927); WALKER, in Lingn. Sc. Journ. VI. p. 49 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 66 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 91 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 210 (1931)

- Syn.** *Morus papyrifera*, LINN., Sp. Pl. ed. 1. p. 986 (1753) excl. syn.; HOUTTUYN, Nat. Hist. III. p. 283 (1774); THUNB., Fl. Jap. p. 72 (1784)
- Streblus cordatus*, LOUR., Fl. Cochinch. ed. 1. p. 615 (1790)
- Papyrius japonica*, LAM., apud POIR. in Lam. Encycl. V. p. 3 (1804)
- Broussonetia Kazi*, in Hort. SIEB. ex BL., Mus. Bot. Lugd. Bat. II. p. 86 (1849)
- ut syn.*

Nom. Jap. *Kazinoki*

Leg. Ipse, Kurio, Jul. 13, 1928.

Distr. Amami-Ōshima, Taiwan, Korea, China, Malay, Polynesia, Australia.

Note. The species is found in waste lands or in cultivated lands at low altitudes.

- Cudrania**, TRÉC., in Ann. Sc. Nat. 3. sér. VIII. p. 122, t. 3 (1847); BUREAU, in DC. Prodr. XVII. p. 285 (1873); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 374 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 82 (1889); LEMÉE, Dict. Gen. Pl. Phan. II. p. 408 (1930)
- Syn.** *Vanieria*, LOUR., Fl. Cochinch. p. 564 (1790)
- Cudranus*, MIQ., Fl. Ind. Bat. I. 2. p. 290 (1859)
- Cudranus*, (RUMPH.) O. KUNTZE, Rev. Gen. Pl. II. p. 625 (1891)

Cudrania cochinchinensis, (LOUR.) MASAMUNE, var. **gerontogea** (NAK.) MASAMUNE, in KUDO et MASAM., Gen. Pl. Formos. I. p. 27 (1932)

- Syn.** *Cudrania javanensis*, FR. et SAV., Enum. Pl. Jap. I. p. 434 (1875); MATSUM. et HAY., Enum. Pl. Formos. p. 380 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 35 (1912)

Cudrania rectispina, HANCE, in Journ. Bot. XIV. p. 365 1876¹; MATSUM. et HAY., Enum. Pl. Formos. p. 380 (1906)

Vanieria cochinchinensis, LOUR. var. *gerantogea*, NAK., in Tokyo Bot. Mag. XLI. p. 516 (1927) MASAMUNE, Prel. Rep. Veg. Yak. p. 67 1929¹; MAK. et NEM., Fl. Jap. ed. 2. p. 220 (1931)

Nom. Jap. *Kakatugayu*

Leg. Ipse, Nagata, Aug. 20, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is found along the forest edges of the laurisilvae, in strand forests or in waste lands.

Ficus, [TOURN.) ex LINN. Syst. ed. 1. 1735]

et Sp. Pl. ed. 1. p. 1059 1753 ; ENDL., Gen. Pl. n. 1859 1836-40 ; BUREAU, in DC. Prodr. XVII. p. 287 1873 ; BENTH. et HOOK. f., Gen. Pl. III. 1. p. 367 1880¹; G. KING., in Ann. Roy. Bot. Gard. Calcutt. I. p. 1 1888¹; ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 89 1889 ; LEMÉE, Dict. Gen. Phan. III. p. 117 1931¹; KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 24 1932¹

Syn. *Gonosuke*, RAF., Sylva. Tellur. p. 58 1838¹

Erosma, BOOTH., Cat. p. 113, ex ENDL., Gen. Suppl. IV. p. 34 1847

Boscheria, DE VRIESE et TEIJSM., in Tijdschr. Nederl. Ind. XXIII. p. 213 1861

Boscheria, CARR., in Rev. Hort. p. 199 1872

Ficus erecta, THUNB., Diss. Ficus. pp. 9. et 15, (1786), et in Trans. Linn. Soc. II. p. 327 1793 ; WILD., Sp. Pl. IV. p. 1140 1806 ; ROEMER et SCHULT., Syst. Veg. I. p. 509 1817 ; SPRENG., Syst. Veg. III. p. 781 (1826) ; SIEB., Syn. Pl. Oecon. p. 29 1827 ; FR. et SAV., Enum. Pl. Jap. I. p. 435 1875¹, et II. p. 490 1876 ; MAXIM., in Mél. Biolog. XI. p. 328 1881 ; ENGL., in Engl. Bot. Jahrb. VI. p. 56 1885 ; KING., in Ann. Roy. Bot. Gard. Calcutt. I. p. 141, t. 178 A. 1883 ; FORB. et HEMSL., Ind. Fl. Sin. II. p. 459 1899 ; MATSUM. et HAY., Enum. Pl. Formos. p. 379 1905 ; SHIRASAWA, Ic. Ess. For. Tree. Jap. II. p. 16, ff. 1-8 1908 ; NAK., Fl. Kor. II. p. 199 1911 , et Fl. Sylv. Kor. XIX. p. 121. t. 33 1932 ; MATSUM., Ind. Pl. Jap. II. 2. p. 36 1912¹; MERR., Enum. Hainan Pl. p. 65 (1927 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 66 1929¹ ; MAK. et NEM., Fl. Jap. ed. 2. p. 212 1931

Syn. *Ficus pumila*, non LINN., THUNB., Fl. Jap. p. 33 (1784

Ficus japonica, BL., Bijdr. IX. p. 440 1825 ; SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 222 (1846

Urostigma pyrifolium, MIQ., [non in Fl. Ind. Bat. I. 2. p. 338 (1859) Cat. Hort. Amst. p. 107, ex MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 199 (1866)

Ficus pyrifolia, (non BURM.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 199 (1866) ; FR. et SAV., Enum. Pl. Jap. I. p. 434 1875¹

Nom. Jap. *Inubiwa*

Leg. Ipse, Ambô, April. 1, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. The plant is often found in waste lands or in forest edges, and sometimes in the laurisilvae or lauri-aculisilvae but rather rarely.

var. *Sieboldi*, KING., in Ann. Bot. Gard. Calcutt. I. p. 142 t. 178 B. (1888¹ ; MAK., in Tokyo Bot. Mag. V. p. 167 (1891) ; MATSUM., Ind. Pl. Jap. II. 2. p. 36 (1912) ;

MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 212 (1931); NAK., Fl. Sylv. Kor. XIX. p. 123, t. 39 (1932); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 25 (1932)

Syn. *Ficus Sieboldii*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 199 (1866), et III. p. 295 (1867); MAXIM., in Mél. Biolog. XI. p. 327 (1881); FR. et SAV., Enum. Pl. Jap. I. p. 435 (1875), et II. p. 490 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 467 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 378 (1906)

Nom. Jap. *Hosoba-inubiwa*

Leg. Ipse, Ambô, Aug. 30, 1931.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea.

Note. The variety is found in low, open, and somewhat sunny spots.

Ficus Miyagii, KOIDZ., in Tokyo Bot. Mag. XXVII. p. 184 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 215 (1931)

Nom. Jap. *Akane-inubiwa*

Leg. Y. KUDO! Aug. 1907.

Distr. Amami-Ôsima, Okinawa.

Note. Dr. KUDO told me that he had once collected the plant in this island. It is not yet reported further north than this island.

Ficus nipponica, FR. et SAV., Enum. Pl. Jap. I. p. 436 (1875), et II. p. 491 (1876); MAK., in Tôkyô Bot. Mag. XIX. p. (112) (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 215 (1931); NAK., Fl. Sylv. Kor. XIX. p. 126, t. 41 (1932)

Syn. *Ficus erecta*, (non THUNB.) MIQ., in HOOK. Lond. Journ. Bot. VII. p. 439 (1848) p.p., et in Ann. Mus. Bot. Lugd. Bat. II. p. 200 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 435 (1875) p.p.

Ficus foveolata, (non WALL.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 294 (1867); FORB. et HEMSL., Ind. Fl. Sin. II. p. 460 (1899) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 375 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 37 (1912)

Ficus foveolata, var. *nipponica*, KING., in Ann. Bot. Gard. Calcutt. I. p. 134 (1887); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929)

Nom. Jap. *Itabi-kazura*

Leg. Ipse, Kosugidani, Sept. 3, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The ficus flourishes best in waste dry lands or the edges of forests near the sea level.

Ficus Pumila, LINN., Sp. Pl. ed. 1. p. 1060 (1753); MAXIM., in Mél. Biolog. XI. p. 342 (1881); KING, in Ann. Bot. Gard. Calcutt. I. p. 124, t. 158 (1887-88); FORB. et HEMSL., Ind. Fl. Sin. II. p. 465 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 379 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 38 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 95 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 216 (1931); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 26 (1932)

Syn. *Ficus Hanceana*, MAXIM., in Mél. Biolog. XI. p. 341 (1881), et in Bull. Acad. Pet. XXVII. p. 553 (1881)

Nom. Jap. *Ôitabi*

Leg. Ipse, April. 3, 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The plant flourishes in open sunny lands near the sea level.

Ficus retusa, LINN., Mant. I. p. 129 (1767); WILLD., Sp. Pl. VI. p. 1147 (1805); BENTH., Fl. Hongk. p. 327 (1861), et Fl. Aust. VI. p. 166 (1873); KING., in Ann. Roy. Bot. Gard. Calc. I. p. 50, t. 61 (1887); HOOK. f., Fl. Brit. Ind. V. p. 511 (1888); FORB. et HEMSLE., Ind. Fl. Sin. II. p. 466 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 376 (1906); MERR., Enum. Philipp. Pl. II. p. 62 (1923); WALKER, in Lingn. Sc. Journ. VI. p. 55 cum f. (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 216 (1931)

Syn. *Ficus nitida*, THUNB., Ficus. p. 14 (1786); WIGHT, Ic. Pl. Ind. Or. t. 642 (1843); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 26 (1932)

Urostigma nitidum, MIQ., in HOOK. Lond. Journ. Bot. VI. p. 582 (1847), et Fl. Ind. Bat. I. pt. 2. p. 345 (1855)

Ficus littoralis, BL., Bijdr. p. 455 (1825-26)

Nom. Jap. *Gazumaru*

Leg. Ipse, Ambô.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, India, Philippines, Malay, Australia, New Caledonia.

Note. The ficus is often found in the plain.

Ficus stipulata, THUNB., Disser. Fic. pp. 5 et 8 (1786), et in Trans. Linn. Soc. II. p. 327 (1794); WILLD., Sp. Pl. IV. 2. p. 1139 (1806) p.p.; ROEMER et SCHULT., Syst. Veg. I. p. 501 (1817); STEUD., Nomencl. Bot. ed. 2. I. p. 638 (1840) p.p.; SPRENG., Syst. Veg. III. p. 779 (1826); NAK., Fl. Sylv. Kor. XIX. p. 124, t. 40 (1932)

Syn. *Ficus pumila*, (non LINN.) MIQ., in Hook. Lond. Journ. Bot. VII. p. 439 (1848), et in Ann. Mus. Bot. Lugd. Bat. II. p. 199 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 435 (1875) partim.

Ficus Thunbergii, MAXIM., in Mém. Biolog. XI. p. 339 (1881); MATSUM., Ind. Pl. Jap. II. 2. p. 39 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 217 (1931)

Ficus foveolata, var. *Thunbergii*, KING., in Ann. Bot. Gard. Calc. I. p. 134, t. 167 G (1888); REHDER, in Journ. Arnold. Arb. X. p. 125 (1929)

Ficus foveolata, (non WALLICH) NAK., Veg. Quelp. p. 38 (1914); MORI, Enum. Pl. Cor. p. 123 (1922)

Nom. Jap. *Hime-itabi*

Leg. Ipse, Jul. 16, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea.

Note. The species grows from low altitudes up to about 700 m above the sea level, and sometimes as an epiphyte on trees.

Ficus Wightiana, WALL., Cat. n. 4540 (1828); BENTH., Fl. Hongk. p. 327 (1861); MAXIM., in Mém. Biolog. XI. p. 333 (1881); KING., in Ann. Bot. Gard. Calc. I. p. 63 (1888); FORB. et HEMSLE., Ind. Fl. Sin. II. p. 469 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 375 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 39 (1912); CHUN., Cat. Tree. and Shrub. Chin. p. 36 (1924); MERR., Enum. Hainan Pl. p. 66 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 67 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 217 (1931); KUDO et MASAMUNE, Gen. Pl. Formos. p. 27 (1932)

Syn. *Ficus superba*, var. *japonica*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 200 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 436 (1875)

Ficus superba, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 287 (1867); KING., in Ann. Roy. Bot. Gard. Calc. I. p. 59, tt. 72 et 84 (1887)

[illegible]

Note. The species is found in wet shady places at low altitudes and is common in South Japan.

Pilea viridissima, MAK., in Tokyo Bot. Mag. XXIII. p. 87 (1909); MAK. et NEM., Fl. Jap. ed. 2. p. 235 (1931)

Syn. *Pilea pumila*, (non A. GRAY) MAXIM., in Mém. Biolog. IX. p. 631 (1876); FR. et SAV., Enum. Pl. Jap. II. p. 492 (1876); MAK., in Tokyo Bot. Mag. X. p. (364) (1896)

Pilea petiolaris, (non BL.) FR. et SAV., Enum. Pl. Jap. II. p. 492 (1879) p.p.

Nom. Jap. *Aomizu*

Leg. Ipse, Aug. 5, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa.

Note. The species grows as undergrowth on wet land in the laurisilvae, and rarely occurs in southern Japan.

Achudemia, (*Achudenia*) BL., in Mus. Bot. Lugd.

Bat. II. p. 57, t. 20 (1852); WEDD., in DC. Prodr. XVI. 1. p. 163 (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 385 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 108 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 32 (1929)

Achudemia japonica, MAXIM., in Bull. Acad. Pet. XXII. p. 241 (1876), et in Mém. Biolog. IX. p. 627 (1876); FR. et SAV., Enum. Pl. Jap. II. p. 493 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 480 (1899); KOM., Fl. Mansh. II. p. 100 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 41 (1912); MORI, Enum. Pl. Cor. p. 124 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 68 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 222 (1931)

Nom. Jap. *Yanamizu*

Leg. Ipse, Aug. 20, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The plant is found as undergrowth in the laurisilvae or in the lauri-aculisilvae, and is rather common in the central part of Japan. It is not yet found in lands further south than this island.

Pellionia, GAUDICH, in Bot. Voy. Freycinet p.

494, t. 119 (1826); ENDL., Gen. Pl. n. 1883 (1836-40); WEDD., in DC. Prodr. XVI. 1. p. 165 (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 385 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 108 (1889)

Syn. *Polychroa*, LOUR., Fl. Cochinch. p. 559 (1790)

Pellea, ANDRÉ, in Illustr. Hort. XXVII. p. 177 (1880)

Pellionia minima, MAK., in Tokyo Bot. Mag. XXIII. p. 85 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 68 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 231 (1931)

Nom. Jap. *Sansyôso*

Leg. Ipse, Jul. 31, 1924.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. I found this species as undergrowth in the lauri-aculisilvae from about 600 m up to 1700 m above the sea level. It has its southern limit in this island.

Pellionia radicans, WEDD., in DC. Prodr. XVI. 1. p. 167 (1869); FORB. et HEMSL., Ind. Fl. Sin. II. p. 481 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 384 (1906); HAY., Mat. Fl. Formos. p. 280 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 231 (1931)

Nom. Jap. *Ôsansyô-sô*

Leg. Ipse, Kusugawa, Mart. 17, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, China.

Note. The species grows as undergrowth in the laurisilvae.

Pellionia scabra, BENTH., Fl. Hongk. p. 330 (1861); WEDD., in DC. Prodr. XVI. 1. p. 166 (1869); MAXIM., in Mém. Biolog. IX. p. 633 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 481 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 384 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 45 (1912); MORI, Enum. Pl. Cor. p. 126 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 68 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 231 (1931)

Nom. Jap. *Kimizu*

Leg. Ipse, Jul. 18, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species grows as undergrowth from the sea level up to about 400 m.

Elatostema, FORST., Char. Gen. p. 105, t. 53 (1776); WEDD., in DC. Prodr. XVI. 1. p. 171 (1869); BENTH. et HOOK. f., Gen. Pl. III. p. 386 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. I. p. 109 (1889); LEMÉE, Dict. Gen. Pl. II. p. 817 (1930)

Syn. *Horreola*, NOR., in Verh. Batav. Gen. V. ed. 1. Art. IV. p. 2 (1790)

Langeveldia, GAUDICH., in Bot. Voy. Freycinet p. 494 (1826)

Elatostemma, ENDL., Gen. Pl. p. 283 (1837)

Langefeldia, STEUD., Nomencl. ed. 2. II. p. 7 (1841)

Elatostoma, WIGHT, Ic. VI. p. 35, t. 2091 (1853)

Elatosoma, FR. et SAV., Enum. Pl. Jap. I. p. 438 (1875)

Elatostema umbellatum, var. *yakusimensis*, MASAMUNE, var. nov.

Herbae perennes graciles glabrae ca. 7 cm altae. Folia alterna haud petiolata, rhomboideo-obovata membranacea, ca. 1 cm longa, 0,5 mm lata, margine dentato-serrata. Flores masculi cymosi haud pedunculati, feminei sessiles.

Nom. Jap. *Yakusima-hime-uwabamisé*

Leg. Ipse, Kurio, ca. 800 m. Jul. 31, 1927.

Distr. Endemic to this island.

Note. It is an endemic variety and rarely grows on somewhat wet ground in the lauri-aciculisilvae.

Boehmeria, JACQ., Enum. Pl. Carib. p. 9 (1760); ENDL., Gen. Pl. n. 1884 (1836-40); WEDD., in DC. Prodr. XVI. 1. p. 195 (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 387 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 111 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 605 (1929)

Syn. *Ranium*, [RUMPH., Herb. Amb. V. p. 214, t. 59, f. 1 (1747)] O. KUNTZE, Rev. Gen. Pl. II. p. 631 (1891)

Duretia, GAUDICH., in Bot. Voy. Freycinet p. 500 (1826)

Splitgerbera, MIQ., Comment. Phytogr. p. 133, t. 14 (1840)

Gymnogyne, F. DIDRICHSEN, Ind. Sem. Hort. Haun. (1850), ex Linnaea XXIX. p. 737 (1858)

Boehmeria holosericea, BL., Mus. Bot. Lugd. Bat. II. p. 221 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 131 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 441 (1875); NAK., Fl. Kor. II. p. 198 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 41 (1912); MA-

SAMUNE, Prel. Rep. Veg. Yak. p. 63 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 223 (1931)

Syn. *Boehmeria platyphylla*, var. *holosericea*, WEDD., in DC. Prodr. XVI. 1. p. 212 (1869)

Nom. Jap. *Oni-yabu-mao*

Leg. Ipse, Yudomari, April. 3, 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Okinawa, Korea.

Note. The species is frequently found along the forest edges at low altitudes.

Boehmeria japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 131 (1867); MAXIM., in Mél. Biolog. IX. p. 642 (1876); KOM., Fl. Mansh. II. p. 101 (1904); NAK., Fl. Kor. II. p. 198 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 223 (1931)

Syn. *Urtica japonica*, LINN. f., Supp. p. 418 (1781)

Urtica macrophylla, THUNB., Fl. Jap. p. 69 (1784)

Boehmeria macrophylla, (non DON) SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 215 (1846)

Boehmeria grandifolia, WEDD., in Ann. Sc. Nat. 4^{me} sér. I. p. 199 (1854); FORB. et HEMSL., Ind. Fl. Sin. II. p. 485 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 41 (1912)

Boehmeria platyphylla, var. *macrophylla*, WEDD., in DC. Prodr. XVI. 1. p. 213 (1869)

Boehmeria Miqueliana, TANAKA, in Bult. Sc. Fakult. Terk. Kjusu, Imp. Univ. I. p. 198 (1925)

Nom. Jap. *Yabumao*

Leg. Ipse, Kurio, Jun. 27, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, Manchuria.

Note. The species is often found in the lowland along the forest edges or by the roadside.

Boehmeria nivea, GAUDICH, Bot. Freyc. Voy. p. 499 (1826); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 214 (1836); WEDD., in Arch. Mus. Hist. Nat. Par. IX. p. 280, t. XI. f. 10-17 (1856), et in DC. Prodr. XVI. p. 206 (1869); BENTH., Fl. Hongk. p. 331 (1861); FR. et SAV., Enum. Pl. Jap. I. p. 439 (1875); MAXIM., in Mél. Biolog. IX. p. 639 (1876); HOOK. f., Fl. Brit. Ind. V. p. 576 (1888); FORB. et HEMSL., Ind. Fl. Sin. II. p. 486 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 335 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 42 (1912); DUNN et TUTCH., Fl. Kwang. and Hongk. p. 251 (1912); MERR., Enum. Philipp. Pl. II. p. 90 (1923); MORI, Enum. Pl. Cor. p. 125 (1922); HANDEL-MAGZ., Symb. Sin. VII. p. 152 (1929)

Syn. *Urtica nivea*, LINN., Sp. Pl. ed. 1. p. 985 (1753)

Urtica utilis, HORT. ex WEDD., in Arch. Mus. Hist. Nat. Par. IX. p. 330 (1856)

Nom. Jap. *Mao*

Leg. Kurio, Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Okinawa, Taiwan, Korea, China, Philippines, Malay.

Note. The species is often found on somewhat open lands and along the forest edges near the sea level.

Boehmeria platanifolia, FR. et SAV., Enum. Pl. Jap. I. p. 440 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 486 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 42 (1912); MORI, Enum. Pl. Cor. p. 125 (1922)

Syn. *Boehmeria platyphylla*, var. *japonica*, WEDD., in DC. Prodr. XVI. 1. p. 213. (1869)

Boehmeria longispica, var. *platanifolia*, FR. et SAV., Enum. Pl. Jap. II. p. 497 (1876)

Boehmeria japonica, MIQ. var. *platanifolia*, MAXIM., in Mél. Biolog. IX. p. 643 (1876); FR., Pl. David. I. p. 270 (1884); MAK. et NEM., Fl. Jap. ed. 2. p. 223 (1931)

Nom. Jap. *Meyabumao*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Kyûsyû, Korea.

Note. The species is found on rather rare occasions in the laurisilvae and has its southern limit in this island.

Boehmeria Sieboldiana, BL., Mus. Bot. Lugd. Bat. II. p. 220 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 130 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 497 (1876); MATSUM., Ind. Pl. Jap. II. 2. p. 43 (1912); MORI, Enum. Pl. Cor. p. 125 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 69 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 224 (1931)

Nom. Jap. *Nagaba-yabumao*

Leg. Ipse, Jul. 13, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The species grows in sunny places near the sea level.

Boehmeria spicata, THUNB., in Trans. Linn. Soc. II. p. 330 (1794); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 131 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 440 (1875); MAXIM., in Mél. Biolog. IX. p. 645 (1876); PALIB., Conspect. Fl. Kor. II. p. (47) 193 (1900); DIELS, Fl. Centr. Chin. p. 304 (1900); NAK., Fl. Kor. II. p. 198 (1911); YABE, Enum. Pl. Manch. p. 39 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 224 (1931)

Syn. *Urtica spicata*, THUNB., Fl. Jap. p. 69 (1784)

Boehmeria longispica, STEUD., in Flora. XXXIII. p. 260 (1850)

Nom. Jap. *Koakaso*

Leg. Ipse, Aug. 1, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. The species ranges from the sea level up to about 700 m and is found in sunny spots in waste lands.

Boehmeria tricuspis, MAK., in Tokyo Bot. Mag. XXVI. p. 387 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 224 (1931)

Syn. *Boehmeria platyphylla*, var. *tricuspis*, HANCE, in Journ. Bot. XII. p. 261 (1874)

Boehmeria japonica, var. *tricuspis*, MAXIM., in Mél. Biolog. IX. p. 642 (1876)

Boehmeria longispica, β *tricuspis*, FR. et SAV., Enum. Pl. Jap. II. p. 497 (1897)

Boehmeria platanifolia, var. *tricuspis*, MATSUM., Ind. Pl. Jap. II. 2. p. 42 (1912)

Boehmeria japonica, MIQ.; MORI, Enum. Pl. Cor. p. 125 (1922)

Nom. Jap. *Akaso*

Leg. Y. KUDO! Aug. 1907.

Distr. Yezo, Honsyû, Sikoku, Korea.

Note. The species is found from the lowland up to about 600 m.

Pouzolzia, GAUDICH, in Bot. Voy. Freycinet p. 503 (1826); ENDL., Gen. Pl. n. 1885* (1836-40); BENTH. et HOOK. f., Gen. Pl. III.

1. 387 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 112 (1889); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 37 (1932)

Pouzolzia indica, GAUD., var. *alienata*, WEDD., in DC. Prodr. XVI. 1. p. 221 (1869); MAXIM., in Mél. Biolog. IX. p. 647 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 490 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 388 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 46 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 235 (1931)

Nom. Jap. *Ariehimemao*

Leg. Ipse, Kosugidani, Jun. 24, 1928,

Distr. Taiwan.

Note. The species occurs rather rarely on somewhat sunny ground in the laurisilvae and the lauri-aciculisilvae.

Gonostegia, TURCZ., in Bull. Soc. Nat. Mosc.

XIX. 2. p. 509 (1846); LEMÉE, Dict. Gen. Pl. Phan. III. p. 316 (1931)

Syn. *Memoralis*, BUCH.-HAM., in WALL. Cat. n. 4598 (1831) nomen; WEDD., in DC. Prodr. XVI. 1. p. 235² (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 388 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 112 (1889)

Hyrtanandra, MIQ., Pl. Jungh. p. 25 (1851)

Gonostegia hirta, MIQ., in Ann. Mus. Bot. Lugd. Bat. IV. p. 303 (1869); MERR., Enum. Philipp. Pl. II. p. 92 (1923); MASAMUNE, in Journ. Trop. Agr. III. p. 113 (1931)

Syn. *Urtica hirta*, BL., Bijdr. p. 495 (1825)

Memoralis quinquenervis, BUCH.-HAM., in WALL. Cat. n. 4601 (1828) nomen; WEDD., in DC. Prodr. XVI. 1. p. 235³ (1869)

Pouzolzia hispida, BENN., Pl. Jav. Rar. p. 66 (1838); BENTH., in HOOK. Kew Journ. p. 23 (1854)

Pouzolzia hirta, HASSK., Cat. Hort. Bogor. p. 80 (1844); HOOK. f., Fl. Brit. Ind. V. p. 586 (1888); FORB. et HEMSL., Ind. Fl. Sin. II. p. 489 (1899); DIELS, in Engl. Bot. Jahrb. XXIX. p. 304 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 388 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 46 (1912)

Memoralis hirta, WEDD., in DC. Prodr. XVI. 1. p. 235⁴ (1869); FR. et SAV., Enum. Pl. Jap. I. p. 441 (1875); MAXIM., in Mél. Biolog. IX. p. 648 (1876); YAMAMOTO, Supp. Ic. Pl. Formos. I. p. 23 (1925); HANDEL-MAGZ., Symb. Sin. VII. p. 153 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 228 (1931)

Nom. Jap. *Turumao*

Leg. Ipse, Jul. 18, 1928.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China, Philippines, Malay.

Note. The species is found in some wet places at low altitudes.

Debregeasia, GAUDICH., Bot. Voy. Bonite. t. 90

(1844-52); WEDD., in DC. Prodr. XVI. 1. p. 235²³ (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 390 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 113 (1889); LEMÉE, Dict. Gen. Pl. II. p. 516 (1930)

Syn. *Morocarpus*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 218 (1846)

Leucocnide, MIQ., Pl. Jungh. I. p. 36 (1851)

Debregeasia edulis, WEDD., Monog. Urt. p. 462 (1856), et in DC. Prodr. XVI. 1. p. 235²⁴ (1869); FR. et SAV., Enum. Pl. Jap. I. p. 442 (1875); MAXIM., in Mél. Biolog.

IX. p. 649 (1876); HANCE, in Journ. Bot. XX. p. 38 (1882); FORB. et HEMSL., Ind. Fl. Sin. II. p. 492 (1899); DIELS, in Engl. Bot. Jahrb. XXIX. p. 305 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 396 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 43 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 68 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 154 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 225 (1931); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 39 (1932)

Syn. *Morocarpus edulis*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 218 (1846); BL., Mus. Bot. Lugd. Bat. II. p. 155, t. 16 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 130 (1867)

Nom. Jap. *Yanagi-itigo*

Leg. Ipse, April. 2, 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The plant is found along running waters from lowland up to about 500 m.

Oreocnide, MIQ., Pl. Jungh. I. p. 39 (1851), et Fl.

Nederl. Ind. I. 2. p. 269 (1859)

Syn. *Villebrunea*, GAUDICH, Bot. Voy. Bonite, tt. 91-92 (1844-52); WEDD., in DC. Prodr. XVI. 1. p. 235²⁰ (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 390 (1880); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 114 (1889)

Oreocnide fruticosa, HANDEL-MAGZ., Symb. Sin. VII. p. 154 (1929); MASAMUNE, in Journ. Trop. Agr. II. p. 32 (1930)

Syn. *Boehmeria fruticosa*, GAUDICH, in Freycinet Voy. p. 500 (1826)

Villebrunea frutescens, BL., Mus. Bot. Lugd. Bat. II. p. 168 (1856) *excl. Syn.*; BENTH., Fl. Hongk. p. 332 (1861); WEDD., in DC. Prodr. XVI. 1. p. 235²⁴ (1869); FR. et SAV., Enum. Pl. Jap. I. p. 442 (1875); HOOK. f., Fl. Brit. Ind. V. p. 590 (1888); HEMSL., in Journ. Linn. Soc. XXVI. p. 491 (1899); MAK. et NEM., Fl. Jap. p. 1074 (1925), et ed. 2. p. 237 (1931)

Oreocnide frutescens, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 131 (1867); MERR., Enum. Hainan Pl. p. 67 (1927)

Villebrunea fruticosa, NAK., in Tokyo Bot. Mag. XLI. p. 514 (1927)

Nom. Jap. *Iwagane*

Leg. Ipse, Mart. 21, 1923.

Distr. Kyûsyû, China.

Note. The species is found along the streams in the lowlands.

Oreocnide pedunculata, (SHIRAI) MASAMUNE, in Journ. Trop. Agr. II. p. 33 (1930); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 40 (1932)

Syn. *Villebrunea pedunculata*, SHIRAI, in Tokyo Bot. Mag. IX. p. 160 (1895); MATSUM., Ind. Pl. Jap. II. 2. p. 48 (1912); MAK. et NEM., Fl. Jap. p. 1074 (1925), et ed. 2. p. 237 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 69 (1929)

Nom. Jap. *Hadonoki*

Leg. Ipse, Sept. 1, 1931.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. Grows along the streams near the sea level.

In this island there are more numerous northern elements of this family than the southern ones. So the island is more closely related to

| Names of Plants | Regions | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------------------|--------------|--------|--------|-------|-------------------------|-----------|------------------------------|-------------------------|
| | Philippines | Bonins | Taiwan | Ryûkyûs | | Kyûsyû | | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Usuri |
| | | | | Okinaua | Amami-Osima | Tanegasima | Kyûsyû Prop. | | | | | | | China |
| <i>Pilea peploides</i> , HOOK. et ARN. | | + | + | + | | | + | | + | + | | | | + |
| <i>Pilea viridissima</i> , MAK. | | | | + | + | | + | + | + | | | | | + |
| <i>Achudemia japonica</i> , MAXIM. | | | | | | | + | + | + | + | | | | + |
| <i>Pellionia minima</i> , MAK. | | | | | | | + | + | + | | | | | |
| <i>Pellionia radicans</i> , WEDD. | | + | | | | | + | + | + | | | | | + |
| <i>Pellionia scabra</i> , BENTH. | | + | + | + | | | + | + | + | + | | | | + |
| <i>Elatostema umbellatum</i> , var. <i>yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | |
| <i>Boehmeria holosericea</i> , BL. | | | | + | | + | + | | + | + | | | | |
| <i>Boehmeria japonica</i> , MIQ. | | | | | + | | + | + | + | + | | | + | + |
| <i>Boehmeria nivea</i> , GAUDICH | + | + | + | | | | | + | + | + | | | | + |
| <i>Boehmeria platanifolia</i> , FR. et SAV. | | | | | | | + | | + | + | | | | + |
| <i>Boehmeria Sieboldiana</i> , BL. | | | | + | + | + | + | + | + | + | | | | |
| <i>Boehmeria spicata</i> , THUNB. | | | | | | | + | + | + | + | | | + | + |
| <i>Boehmeria tricuspis</i> MAK. | | | | | | | | + | + | + | + | | | |
| <i>Pouzolzia indica</i> , GAUD. var. <i>alienata</i> , WEDD. | | | + | | | | | | | | | | | + |
| <i>Gonostegia hirta</i> , MIQ. | + | + | + | + | | | + | | + | | | | | + |
| <i>Debregeasia edulis</i> , WEDD. | | + | + | + | + | + | + | | + | | | | | + |
| <i>Oreocnide fruticosa</i> , HANDEL-MAGZ. | | | | | | | + | | | | | | | + |
| <i>Oreocnide pedunculata</i> , (SHIRAI) MASAMUNE | | + | + | + | + | + | + | | | | | | | |
| Total | 19 | 2 | 8 | 9 | 8 | 4 | 15 | 11 | 15 | 10 | 1 | | 4 | 11 |
| Percentage | 10 | 42 | 47 | 42 | 21 | 79 | 58 | 79 | 53 | 5 | | | 21 | 58 |
| (Southern elements 12) | | | | | | (Northern elements 17) | | | | | | | | |

the northern floral regions than to the southern regions.

In this family the island shows no special relation either with the northern or the southern floral regions.

Loranthaceae

Loranthaceae, D. DON, Prodr. Fl. Nepal. p. 142 (1825)

Syn. *Loranthaeae*, JUSS., in Ann. Mus. XII. p. 292 (1808)

Loranthus, [LINN., Syst. ed. 2. p. 22 (1740)] et

Sp. Pl. ed. 1. p. 331 (1753); DC., Prodr. IV. p. 286 (1830); ENDL., Gen. Pl. n. 4586 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 207 (1880); ENGL., in ENGL. u. PRANT, Nat. Pfl.-fam. III. i. p. 183 (1889), et Nach. p. 72 (1915)

Syn. *Scurrula*, LINN., Sp. Pl. ed. 1. p. 110 (1753); G. DON, Gen. Hist. III. p. 424 (1834)

Lonicera (PLUM.) ex GAERTN., Fruct. I. p. 132, t. 27 (1788)

Helixanthera, LOUR., Fl. Cochinch. p. 142 (1790)

Helicia, PERS., Syn. I. p. 214 (1805) p.p.

Helicanthera, ROEM. et SCHULT., Syst. V. pp. X. et 170 (1819)

Helisanthera, RAF., in Ann. Gener. Sc. Phys. VI. p. 87 (1820)

Glutago, COMM. et POIR., in Dict. Sc. Nat. XIX. p. 87 (1821)

Moquinia, SPRENG. f., Tent. Suppl. p. 9 (1828)

Tristerix, MART., in Fl. XIII. p. 108 (1830)

Chichlanthus, V. TIEG., in Bull. Soc. Bot. Fr. XLII. pp. 243, 253 (1895)

Phyllodesmis, V. TIEG., in Bull. Soc. Bot. Fr. XLII. p. 255 (1895)

Loranthus Kaempferi, MAXIM., in Mém. Biolog. IX. p. 612 (1876); FR. et SAV., Enum. Pl. Jap. II. p. 482 (1876); MATSUM., Ind. Pl. Jap. II. 2. p. 48 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 69 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 241 (1931)

Syn. *Viscum album*, (non LINN.) THUNB., Fl. Jap. p. 63 (1784)

Viscum Kaempferi, DC., Prodr. IV. p. 285 (1830); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 203 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 406 (1875)

Phyllodesmis Kaempferi, V. TIEGH., in Bull. Soc. Bot. Fr. XLIII. p. 118 (1896)

Nom. Jap. *Matugumi*

Leg. Ipse, Kosugidani, Sept. 5, 1926.

Dist. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. The plant grows in the lauri-aciculisilvae as a parasite on *Tsuga*.

Loranthus yadoriki, SIEB., in SIEB. et ZUCC. Fl. Jap. Fam. Nat. I. p. 193 (1845); FR. et SAV., Enum. Pl. Jap. II. p. 481 (1876); MAXIM., in Mém. Biolog. IX. p. 609 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 407 (1894); DIELS, in Engl. Bot. Jahrb. XXIX. p. 305 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 357 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 49 (1912); MORI, Enum. Pl. Cor. p. 128 (1922); CHUNG, Cat. Tree. and Shrub. Chin. p. 39 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 70 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 159 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 243 (1931)

Syn. *Cichlanthus Yadoriki*, V. TIEGH., in Bull. Soc. Bot. Fr. XLIII. p. 188 (1896)

Scurrula Yadoriki, DANSER, in Bull. Jard. Bot. Buit. sér. 3. X. p. 354 (1929)

Nom. Jap. *Ôba-yadoriki*

Leg. Ipse, Jun. 6, 1928.

Balanophora japonica is the only element of this family in this island that has its southern limit in Amami-Ōshima: I think *Bale-neikom tobiracola* is also indigenous to Yakusima, but I could not find it in the island.

Aristolochiaceae

Aristolochiaceae, BL., Enum. Pl. Jav. I. p. 81 (1830); LINDL., Nat. Syst. ed. 2. p. 205 (1836); DUCH., in DC. Prodr. XV. 1. p. 421 (1864)

Syn. *Aristolochiae*, B. JUSS., in Hort. Trianon (1759), ex JUSS., Gen. Pl. LXIII. p. 72 (1879)

Aristolochieae, JUSS., in Ann. Mus. Paris. V. p. 221 (1804) partim.

Asarum, [TOURN., ex LINN., Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 442 (1753); ENDL., Gen. Pl. n. 2160 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 122 (1880); SOLEREDER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 271 (1889)

Syn. *Hexastylis*, RAF., Neogenyt. p. 3 (1825)

Heterotropa, MORREN et DECNE., in Ann. Sc. Nat. V. sér. II. p. 314, t. 10 (1834)

Asarum kiusianum, MAEKAWA, in Tokyo Bot. Mag. XLVI. p. 569 (1932)

Nom. Jap. *Tukusi-aoi*

Leg. Ipse, April. 1, 1927

Distr. Kyûsyû.

Note. The species is restricted to this island and Kyûsyû, and it is found in the laurisilvae in Yakusima.

Asarum kumageanum, MASAMUNE, sp. nov.

Syn. *Asarum Fujinoi*, (non ITO) MASAMUNE, Prel. Rep. Veg. Yak. p. 70 (1929) p.p.

Herbae perennes, acaules. Rhizoma repens sparse radicans, radicibus teretibus incrassatis 1.5 mm in diametro. Folia longe petiolata, petiolis 4-8 cm longis vix hirsutis teretibus, basi plus minusve caulem semi amplexantibus intus subsulcatis. Lamina coriaceo-chartacea cordato-oblonga, saepe variegata, ab apice petioli usque apicem laminae 4-6 cm longa, 3-4 cm lata apice acuta vel cuspidato-acuta basi auriculato-cordata, vel vix hastato-auriculata, auriculis 1-2 cm longis 1-1.5 cm latis apice rotundatis, pagine utraque glabra, 5 nervia supra ad nervo hirsuta. Flores quasiterminales solitarii, pedicellis ca. 2 cm longis subglabris. Perianthii tubus 5-7 cm longus 0.8-1.3 cm latus obconicus extus glaber rugulosus, intus reticulatus, limbo patenti 3-lobato, lobis rotundato-triangularibus 1 cm longis 1.1 cm latis, apice rotundatis, intus rugosissimis. Stamina 12. Ovarium semi-superius. Semina eliposoideo-subglobosa ca. 4 mm longa 2 mm lata.

Nom. Jap. *Kuwaiba-kanai*

Leg. Ipse, April. 1, 1927.

Note. The species is found as undergrowth in the laurisilvae and is restricted to this island.

Asarum yakusimense, MASAMUNE,

Acaulia. Rhizoma brevis cicateribus foliorum approximativè notatis. Folia

coriacea longe petiolata, petiolis 3-7 cm longis glabris. Lamina cordato-triangularis vel ovato-cordata ca. 6-8 cm longa, 5-9 cm lata apice obtuso-acuta vel acuta, basi cordata, lobis cordis 2-3 cm longis, 2.5-4 cm latis, apice rotundatis, distincte 7-nervia, nervis utrimque elevatis supra pubescentibus, subtus glabris utraque pagine glaberrima, stipulis crassis triangulari-lanceolatis, ca. 1.5 cm longis 0.7 cm latis. Flores crassiusculi quasixillares solitarii, pedicellis 6 mm longis glabris. Perianthii tubus campanulatus latior quam longior ca. 9 mm longus 14 mm latus, extus rugosus glaber, intus grosse tessellato-reticulatus, reticulis valde elevatis pubescentibus; limbo patenti cum lobis 3 cm in diametro, extus glabro, intus atropurpureo circum orem tubi multiserialiter subcirculariter plicato-ruguloso, rugulis ca. 1 mm elevatis, 3-lobato, lobis triangulari-rotundatis ca. 15 mm latis 14 mm longis. Stamina 12 subsessilia, antheris oblongis cum connectivis ca 2.5 mm longis 1 mm latis. Ovarium superius.

Nom. Jap. Yakusima-ao

Leg. Ipse, Jun. 7, 1928.

Note. The species is restricted to this island, and grows as undergrowth in the lauri-aciculisilvae.

Aristolochia, [TOUR., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 960 (1753); ENDL., Gen. Pl. n. 2162 (1836-40); DUCH., in DC. Prodr. XV. 1. p. 432 (1864); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 123 (1880); SOLEREDER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. p. 272 (1889)

Syn. Isotrema, RAF., in Amer. Monthly Mag. p. 195 (1819)

Cardiolochia, RAF., ex REICHENB., Consp. p. 85 (1828)

Aristolochia Kaempferi, WILLD., Sp. Pl. IV. p. 152 (1805); DUCH., in DC. Prodr. XV. 1. p. 439 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 419 (1875); HANCE, in Journ. Bot. XVI. p. 233 (1878); FORB. et HEMSL., Ind. Fl. Sin. II. p. 362 (1891); MATSUM., Ind. Pl. Jap. II. 2. p. 52 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 70 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 246 (1931)

| Names of Plants | Regions | | | | | Ryūkyūs | Kyūsyū | Tanegashima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Ussuri | China |
|--|-------------|--------|--------|---------|--------------|---------|--------|-------------|--------------|--------|--------|-------|-------------------------|-----------|-------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | | | | | | | | | | | | |
| <i>Asarum kiusianum</i> , MAEKAWA | | | | | | | + | | | | | | | | | | |
| <i>Asarum kumageanum</i> , MASAMUNE | | | | | | | | | | | | | | | | | |
| <i>Asarum yakusimense</i> , MASAMUNE | | | | | | | | | | | | | | | | | |
| <i>Aristolochia Kaempferi</i> , WILLD. | | | | + | + | | + | + | + | | | | | | | | + |

Nom. Jap. *Ô-manosuzukusa*

Leg. Ipse, Nakama, Jul. 6, 1928.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, China.

Note. I found this climbing plant in the lauri-aciculisilvae.

The island is more or less related to the northern regions, because some representatives of this family have their southern limit in this island.

Mitrastemonaceae

Mitrastemonaceae, MAKINO, in Tokyo Bot. Mag. XXV. p. 252 (1911)

Herbae perennes, ad *Shiium* radices truncos ramulosque parasiticae, glabrae. Volva breviter globularis, distans vel aggregata, annua. Caulis volvae simplex, solitarius, annuus, squamosus, squamis conspicuis opposito-decussatis. Flos solitarius, terminalis subsessilis ebracteatus, hermaphroditus. Calyx gamosepalus, faucis margine truncatus integerque, persistens. Corolla nulla. Stamina hypogaea 1-seriata, tamen inter se mitram convata, et pistillum oblecta, antheris annulum latum connatis extrosis foramine dehiscentibus, connectivo parvo calyptriformi apice foramine minuto praedito vel subnullo, pollinibus carnosus. Ovarium superius, sessile, uniloculare, placentis labyrinthi-formibus ovulis numerosis anatropis integumento unico instructis. Stylus crassus solitarius, terminalis, brevis, stigmate hemispherico-conico. Fructus baccatus.

Mitrastemon, MAKINO, in Tokyo Bot. Mag. XXIII. pp. (326) (357) (1909), et XXV. p. 253 (1911); HAY., in Engl. Bot. Jahrb. LI. p. 165 (1914)

Harbae ad *Shiium* radices truncos ramulosque parasiticae, parvae. Caulis simplex, basi volva pauci-lobulata praeditus, squamis 5-6 jugis imbricatis sursum decussatis. Flos hermaphroditus actinomorpha, solitarius, terminalis, sessilis. Calyx poculiformis, longitudine multi-nervatus, faucis margine truncatus. Corolla nulla. Stamina inter se connata et mitram formantia, tubo filamentorum membranaceo elongato longitudinaliter paralliterque striato, tubo antherarum brevi, loculis minutis numerosis dense oblecto, connectivo breviter producto calyptriformi apice foramine minuto praedito. Ovarium superius, uniloculare, placentis multilamellatis, stylo crasso brevi contracto et articulo, stigmate semisphaerico-conico apice umbellato, ovulis plus-minus stipitatis anatropis integumento unico instructis. Fructus baccatus. Species una, in Japonia meridionali, Formosa, Ryûkyû et Sumatra incola.

Mitrastemon Yamamotoi, MAK., in Tokyo Bot. Mag. XXV. p. 255 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 70 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 410 (1931)

Nom. Jap. *Yakkosô*

Leg. Ipse, Ambô, 1924.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species is a parasite on the genus *Shiia*, and is found in the laurisilvae near the sea-level.

Syn. Reynoutria, STEUD., Nomencl. p. 684 (1821)

Reynoutria japonica, HOUTT., Handleid. Plantenk. VIII. p. 640, t. 51 (1777)

var. *typica*, OHKI, in Tokyo Bot. Mag. XL. p. 49 (1926)

Syn. Polygonum multiflorum, THUNB., Fl. Jap. p. 169 (1784) p. m.

Polygonum cuspidatum, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 208 (1846); MEISS., in DC., Prodr. XIV. p. 136 (1857), et in Ann. Mus. Bot. Lugd. Bat. II. p. 64 (1865); REGEL, in Gartenf. IX. p. 152, t. 291 (1860); FR. et SAV., Enum. Pl. Jap. I. p. 402 (1875); HOOK., in Bot. Mag. t. 6503 (1880); HAY., Fl. Mont. Formos. p. 185 (1908); MATSUM., Ind. Pl. Jap. II. 2. p. 56 (1912)

Polygonum Reynoutria, MAK., in Tokyo Bot. Mag. XV. p. 84 (1901); MAK. et NEM., Fl. Jap. ed. 2. p. 262 (1931)

Polygonum Reynoutria, var. *typica*, NAK., in Tokyo Bot. Mag. XXIII. p. 384 (1909)

Nom. Jap. Itadori

Leg. Ipse, Inter Ambō et Kosugidani, Jun. 6, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Taiwan.

Note. The species occurs on rare occasion in this island, at low altitudes.

Polygonum, [TOURN., ex LINN. Syst. ed. 1. (1735),

et Gen. Pl. ed. 1 p. 116 (1735)] et Sp. Pl. ed. 1. p. 359 (1753) p.p.; ENDL.,

Gen. Pl. n. 1986 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 97 (1880) p.p.;

DAMMER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. a. p. 25 (1891) p.p.

Syn. Avicularia, STEUD., Nomencl. ed. 2. l. p. 174 (1840)

Polygonum plebeium, R. BR., Prodr. Fl. Nov. Holl. p. 420 (1810); MEISS., in DC. Prodr. XIV. p. 94 (1856); BENTH., Fl. Hongk. p. 287 (1861); HOOK. f., Fl. Brit. Ind. V. p. 27 (1886); FORB. et HEMSLE., Ind. Fl. Sin. II. p. 346 (1891); DIELS, Fl. Cent. Chin. p. 312 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 336 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 60 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 217 (1912); MERR., Enum. Philipp. Pl. II. p. 124 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 261 (1931)

Syn. Polygonum aviculare, (non LINN.) LOUR., Fl. Cochinch. p. 241 (1790)

Polygonum hermaroides, DELILE, Desc. Egypt. p. 61 (1813); MEISN., in DC. Prodr. XIV. p. 94 (1856)

Polygonum Miquelianum, MEISN., in DC. Prodr. XIV. p. 92 (1856)

Polygonum effusum, MEISN., in DC. Prodr. XIV. p. 93 (1856)

Polygonum Roxburgii, MEISN., in DC. Prodr. XIV. p. 93 (1856)

Polygonum illecebroides, MEISN., in DC. Prodr. XIV. p. 94 (1856)

Polygonum cliffortioides, MEISN., in WALL. Pl. As. Rar. III. p. 62 (1832), et in DC. Prodr. XIV. p. 94 (1856)

Polygonum Perrottetii, MEISN., in DC. Prodr. XIV. p. 94 (1856)

Polygonum ciliosum, MEISN., in DC. Prodr. XIV. p. 95 (1856)

Polygonum aviculare, var. *minutiflorum*, FR., Pl. David. p. 253 (1884)

Polygonum aviculare, var. *buxifolium*, MASAMUNE, Prel. Rep. Veg. Yak. p. 71 (1929)

Nom. Jap. Yanbaru-mitiyanagi

Leg. Ipse, Kurio.

Distr. Okinawa, Taiwan, South China, Philippines, Malay, Cochinchina, India, Egypt.

Note. The species is found in tropical and subtropical countries, and in Japan it has its northern limit in this island.

Tovara, ADANS., Fam. p. 276 (1763)

Syn. *Polygonum*, Sect. *Tovara*, BENTH., in BENTH. et HOOK. f. Gen. Pl. III. 1. p. 98 (1880)

Tovara filiformis, NAK., New Class. Linn. Poly. 8 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 71 (1929)

Syn. *Polygonum filiforme*, THUNB., Fl. Jap. p. 163 (1784); MEISN., in DC. Prodr. XIV. p. 112 (1856), et in Ann. Mus. Bot. Lugd. Bat. II. p. 59 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 396 (1875), et II. p. 478 (1876)

Polygonum virginianum, (non LINN.) FORB. et HEMSL., Ind. Fl. Sin. II. p. 352 (1891); MAK., in Tokyo Bot. Mag. X. p. 63 (1896); KUROIWA, in Tokyo Bot. Mag. XIV. p. 139 (1900); MATSUM., Ind. Pl. Jap. II. 2. p. 63 (1912)

Tovara virginiana, RAFIN. var. *filiformis*, STEW., Polyg. East. Asi. p. 14 (1930); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 54 (1932)

Nom. Jap. *Mizuhiki*

Leg. Ipse, Jul. 15, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China,

Note. The species grows as undergrowth in the lauri-aciculisilvae from the sea level up to about an altitude of 700 m.

Persicaria, [TOURN., Inst. Rei. Herb. I. p. 509. t.

290. f. 1 (1705); LINN., Syst. ed. 1. (1735)]; HILL., British Herball. p. 486 (1756)

Syn. *Polygonum*, Sect. *Persicaria*, MEISSN., in DC. Prodr. XIV. p. 101 (1857); BENTH., in BENTH. et HOOK. f. Gen. Pl. III. 1. p. 93 (1880)

Persicaria auriculatum, (MAK.) comb. nov.

Syn. *Polygonum auriculatum*, MAK., in Tokyo Bot. Mag. XVII. p. 117 (1903); MAK. et NEM., Fl. Jap. ed. 2. p. 252 (1931)

Polygonum Cavaleriei, LÉVEL., in Fed. Rep. VIII. p. 172 (1910)

Persicaria hastato-auriculata, GROSS.; NAK., Fl. Quelp. Is. p. 41 (1914); MORI, Enum. Pl. Cor. p. 132 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929)

Polygonum strigosum, R. BR. var. *hastato-sagittatum*, STEW., Polyg. East. As. p. 90 (1930); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 53 (1932) p.p.

Nom. Jap. *Hosoba-no-unagi-tukami*

Leg. Ipse, Jun. 21, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa, Taiwan, Korea.

Note. The species is often found in ditches among rice-fields.

Persicaria Blumei, GROSS, in LOES. Pfl. Welt. Kiautsch. Geb. p. 111 (1918); NAK., Fl. Quelp. Is. p. 40 (1914); MORI, Enum. Pl. Cor. p. 131 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 71 (1929); YAMAZUTA, List Manch. Pl. p. 93 (1930)

Syn. *Polygonum longisetum*, DE BRUYN., in MIQ. Pl. Jungh. p. 307 (1854)

Polygonum Donii, MEISN. var. *longisetum*, DE BRUYN., ex MIQ. Fl. Ind. Bat. I. p. 1000 (1855)

Polygonum Blumei, MEISN., in MIQ. Ann. Mus. Bot. Lugd. Bat. II. p. 57 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 395 (1875), et II. p. 473 (1876) p.p.; FORB.

et HEMSL., Ind. Fl. Sin. II. p. 334 (1891); MATSUM., Ind. Pl. Jap. II. 2. p. 55 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 253 (1931)

Polygonum posumbu, MATSUM. et HAY., Enum. Pl. Formos. p. 340 (1906) p.p.

Polygonum caespitosum, BL. var. *longisetum*, STEW., Polyg. East. As. p. 67 (1930)

Nom. Jap. *Inu-tade*

Leg. Ipse, Sept. 5, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria.

Note. The species is rather common in the lowlands near cultivated fields.

Persicaria Blumei, NAK. var. *albiflora*, HONDA, in Tokyo Bot. Mag. XLV. p. 298 (1931)

Syn. *Persicaria caespitosum*, var. *longisetum* (STEW.) f. *album*, MASAM., MSS.

Nom. Jap. *Sirobana-inutade*

Leg. Ipse, Isso, Sept. 2, 1931.

Distr. Honsyû.

Note. The variety is often found in rice fields at low altitudes.

Persicaria conspicua, NAK., ex MORI, Enum. Pl. Cor. p. 131 (1922), et in Tokyo Bot. Mag. XL. p. 51 (1926)

Syn. *Polygonum japonicum*, f. *macranthae*, FR. et SAV., Enum. Pl. Jap. II. p. 474 (1876) p.p.

Polygonum japonicum, MATSUM. et HAY., Enum. Pl. Formos. p. 335 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 58 (1912); STEW., Polyg. East. As. p. 55 (1930) p.p.

Polygonum japonicum, var. *conspicuum*, NAK., in Tokyo Bot. Mag. XXII. p. (63) (1908), et Polyg. Kor. p. 10 (1908); MAK. et NEM., Fl. Jap. ed. 2. p. 257 (1931)

Polygonum conspicuum, NAK., in Tokyo Bot. Mag. XXIII. p. (389) (1909), et Fl. Kor. II. p. 168 (1911)

Nom. Jap. *Sakura-tade* leg. Y. KUDO! Aug. 1907.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea.

Note. It is found on waste land or near ditches in cultivated lands.

Persicaria perfoliata, H. GROSS, in LOESEN. Pf. Welt. Kiautsch. Geb. p. 113 (1918)

Syn. *Polygonum perfoliatum*, LINN., Syst. ed. 10 (1759), et Sp. Pl. ed. 2. p. 521 (1763); MEISN., in DC. Prodr. XIV. p. 132 (1857); FORB. et HEMSL., Ind. Fl. Sin. II. p. 344 (1891); COURCHET, in LECOMTE, Fl. Indo-Chin. V. i. p. 38 (1910); NAK., Fl. Kor. II. p. 171 (1911); MERR., Enum. Philipp. Pl. II. p. 123 (1923), et Enum. Hainan Pl. p. 71 (1927); MIURA, List Pl. Manch. and Mongol. p. 120 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 260 (1931); STEW., Polyg. As. Or. p. 81 (1930)

Chylacalyx perfoliatus, (LINN.) HASSK. in Fl. XXV. 11. Beibl. p. 20 (1842)

Echinocaulos perfoliatus, MEISN., ex HASSK., in Fl. XXV. 11. Beibl. p. 20 (1842)

Tracaulon perfoliatum, (LINN.) GREENE, in Leaf. I. p. 22 (1904)

Echinocaulon perfoliatum, (LINN.) HASSK. ex COURCHET, in LECOMTE, Fl. Ind. Chin. V. i. p. 38 (1910)

Nom. Jap. *Isimikawa*

Leg. Ipse, Jul. 16, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, Manchuria.

Note. The species is found near the rice fields at low altitudes.

Persicaria sagittatum, LINN. var. *aestivum* (MEISN.) MASAMUNE, com nov.

Syn. *Polygonum sagittatum* var. *aestivum*, MAK., in Tokyo Bot. Mag. VI. p. 49 (1892); KOIDZ., Symb. p. 13 (1930)

Polygonum sagittatum, LINN., var. *sibiricum*, (non MEISN.) MAK., in Tokyo Bot. Mag. XVII. p. 149 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 61 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 263 (1931)

Persicaria aestiva, OHKI, in Tokyo Bot. Mag. XL. p. 55 (1926)

Nom. Jap. *Unagi-tukani*

Leg. Ipse, April. 1927.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan.

Note. It is found in wet places in cultivated lands, and in waste places in the lowlands.

Persicaria senticosus, H. GROSS, in LOESEN., Pfl.-welt. Kiautsch-Geb. p. 113 (1918)

Syn. *Truellum japonicum*, HOUTT., Naturl. Hist. VIII. p. IV. p. 427, t. 48, f. 1 (1777)

Chylocalyx senticosus, MEISN., in MIQ. Ann. Mus. Bot. Lugd. Bat. II. p. 65 (1865)

Polygonum Babingtonii, HANCE, in Ann. Sc. Nat. V. 5. p. 239 (1866)

Polygonum typhonifolium, HANCE, in Ann. Sc. Nat. V. 5. p. 239 (1866)

Polygonum senticosus, FR. et SAV., Enum. Pl. Jap. I. p. 401 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 349 (1891); NAK., Fl. Kor. II. p. 171 (1911); STEW., Polyg. East. Asi. Cont. p. 82 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 263 (1931)

Persicaria senticosus, NAK., ex MORI, Enum. Pl. Cor. p. 133 (1922); YAMAZUTA, List Pl. Manch. p. 94 (1930)

Polygonum Truellum, KOIDZ., in Tokyo Bot. Mag. XL. p. 334 (1926)

Persicaria Truellum, MASAMUNE, Prel. Rep. Veg. Yak. p. 71 (1929)

Nom. Jap. *Mamakono-sirinsugui*

Leg. Ipse, Mart. 21, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The plant is often collected in waste places or in rice fields at low altitudes.

Persicaria Sieboldii, OHKI, in Tokyo Bot. Mag. XL. p. 54 (1926)

Syn. *Polygonum sagittatum*, (non LINN.) THUNB., Fl. Jap. p. 167 (1784); MAXIM., in Mél. Biolog. IX. p. 617 (1876); FR. et SAV., Enum. Pl. Jap. II. p. 476 (1876)

Polygonum Sieboldii, MEIS., in DC. Prodr. XIV. p. 133 (1856), et in Ann. Mus. Bot. Lugd. Bat. II. p. 63 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 400 (1875); MAXIM., in Mél. Biolog. IX. p. 617 (1876)

Polygonum sagittatum, LINN. var. *sibiricum*, MEISS., in DC. Prodr. XIV. p. 132 (1856)

Polygonum sagittatum, var. *sibiricum*, form. *luxurians*, KORSCHINSKY, in Act. Hort. Petr. XII. p. 383 (1892)

Polygonum sagittatum, LINN. var. *americanum*, MEISN. form. *Sieboldi*, MAK., in Tokyo Bot. Mag. XVII. p. 150 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 62 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 262 (1931)

Polygonum sagittatum, var. *Sieboldii*, MAXIM., ex MAK. in Tokyo Bot. Mag. XVII. p. 150 (1903); KOM., Fl. Mansh. II. p. 132 (1904); NAK., Fl. Kor. II. p. 170 (1911)

Persicaria sagittata, GROSS, apud MORI, Enum. Pl. Cor. p. 133 (1922) p.p.

Nom. Jap. *Ahino-unagi-tukami*

Leg. Ipse, Jun. 24, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The species is found in cultivated low lands especially in wet ground near ditches or streamlets.

Persicaria Thunbergii, (SIEB. et ZUCC.) H. GROSS, in LOESN. Pfl.-welt. Kiautch. Geb. p. 114 (1918); MORI, Enum. Pl. Cor. p. 133 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 71 (1929); YAMAZUTA, List Manch. Pl. p. 95 (1930)

Syn. *Polygonum arifolium*, (non LINN.) THUNB., Fl. Jap. p. 168 (1784)

Polygonum Thunbergii, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 208 (1846); FORB. et HEMSL., Ind. Fl. Sin. II. p. 351 (1891); NAK., Fl. Kor. II. p. 171 (1911); HULTËN, Fl. Kamtch. II. p. 55 (1928)

Polygonum stoloniferum, F. SCHNEID., in MEISN. Acad. Sci. St. Péts. XII. p. 168 (1868)

Polygonum Thunbergii, SIEB. et ZUCC. var. *typicum*, FR. et SAV., Enum. Pl. Jap. II. p. 475 (1876); MAK. et NEM., Fl. Jap. ed. 2. p. 264 (1931)

Tracaulon Thunbergii, GREENE, Leaf. I. p. 22 (1904)

Nom. Jap. *Mizosoba*

Leg. Ipse, Aug. 20, 1928.

Distr. Kamtchatka, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, Manchuria.

Note. The species is found in low lands, near cultivated lands, especially in ditches among rice fields. It is common in the Far East.

Persicaria viscofera, (MAK.) GROSS, ex NAK. Fl. Quelp. Is. p. 42 (1914), et in LOESN., Pfl.-welt. Kiaut. Geb. p. 114 (1918); MORI, Enum. Pl. Cor. p. 134 (1922)

Syn. *Polygonum viscoferum*, MAK., in Tokyo Bot. Mag. XVII. p. 115 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 265 (1912)

Polygonum viscosum, (non HAM.) FORB. et HEMSL., Ind. Fl. Sin. II. p. 352 (1891); KOM., Fl. Mansh. II. p. 120 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 352 (1906) p.p.; STEW., Polyg. East. As. p. 48 (1930) p.p.; KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 54 (1932) p.p.

Polygonum Yokusaiianum, MAK., in Tokyo Bot. Mag. XXVIII. p. 116 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 266 (1931)

Persicaria Posumbu, var. *tenera*, OHKI, in Tokyo Bot. Mag. XL. p. 52 (1926)

Polygonum caespitosum, STEW., Polyg. East. As. p. 66 (1930) p.p.; KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 51 (1932)

Nom. Jap. *Hana-tade*

Leg. Ipse, April. 3, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria, China.

Note. The plant is often found in low lands near dwellings, and in cultivated lands.

| Names of Plants | Regions | | | | | | | | | | | | | | |
|---|---------------------------------|---------|--------------|------------|--------------|------------------|-------|-------------------------|-----------|-------------------------------|-------------------------|-------|---|----|----|
| | Philippines Bonins Taiwan | Okinawa | Amami-Oshima | Tanegasima | Kyûsyû Prop. | Sikoku Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Usuri | China | | | |
| Rumex japonicus, HOUTT. | | + | + | + | + | + | + | | | | | | | | |
| Reynoutria japonica, HOUTT. var. typica, OHKI. | | + | | | + | + | + | | | | | | | | |
| Polygonum plebeium, R. BR. | + | + | + | | | | | | | | | + | | | |
| Tovara filiformis, NAK. | | + | + | + | + | + | + | + | | | | + | | | |
| Persicaria auriculatum, (MAK.) | | + | + | + | + | + | + | + | | | | | | | |
| Persicaria Blumei, GROSS, | | + | + | + | + | + | + | + | | | | | | | |
| Persicaria Blumei, NAK. var. albiflora, HONDA. | | | | | | + | | | | | + | | | | |
| Persicaria conspicua, NAK. | | + | | | + | + | + | + | | | | | | | |
| Persicaria perfoliata, GROSS | + | + | + | | + | + | + | + | | | + | + | | | |
| Persicaria sagittatum, LINN. var. aestivum (MEISN.) MASAMUNE | | + | + | | + | + | + | + | + | | | | | | |
| Persicaria senticosa, GROSS | | + | + | + | + | + | + | | | | + | + | | | |
| Persicaria Sieboldii, OHKI | | | | | + | + | + | + | | | + | | | | |
| Persicaria Thunbergii (SIEB. et ZUCC.) GROSS | | + | + | + | + | + | + | + | | + | + | + | | | |
| Persicaria viscofera (MAK.) GROSS | | + | | | + | + | + | + | | | + | + | | | |
| Total | 14 | 2 | 11 | 6 | 8 | 5 | 12 | 12 | 13 | 10 | 9 | 1 | 1 | 6 | 6 |
| Percentage | 14 | | 79 | 43 | 57 | 36 | 86 | 86 | 90 | 71 | 64 | 7 | 7 | 43 | 43 |

(Southern elements 12)

(Northern elements 13)

From the above table, it will be clear that the island is closely related to the northern regions in respect of this family. But considering the nature of this family which has species widely distributed in the Far East, it is natural that it should not show any distinct affinity to either district as some other families do.

[illegible]

Lugd. Bat. II. p. 194 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 386 (1875); MAK. et NEM., Fl. Jap. ed. 2. p. 271 (1931)

Nom. Jap. *Koakaza*

Leg. Ipse, Ambô.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria, Ussurie.

Note. Grows near cultivated lands and dwellings; rather a common species in Japan.

Considering this family the island shows no special affinity either with the northern or with the southern regions.

Amarantaceae

Amarantaceae, JUSS., in Ann. Mus. Paris. II. p. 131 (1803); ENDL., Gen. Pl. p. 300 (1837); MOQ., in DC. Prodr. XIII. 2. p. 231 (1849)

Syn. *Amaranthi*, JUSS., Gen. Pl. p. 87 (1798) p.p.

Celosia, [LINN., Gen. Pl. ed. 1. p. 34 (1737)] et Sp. Pl. ed. 1. p. 205 (1753); ENDL., Gen. Pl. n. 1975 (1836-40); MOQ., in DC. Prodr. XIII. 2. p. 237 (1849); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 24 (1880); SCHING., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. a. p. 99 (1893); LEMÉE, Dict. Gen. Pl. Phan. II. p. 6 (1930)

Syn. *Amaranthus*, ADANS., Fam. II. p. 269 (1763)

Sukana, ADANS., Fam. II. p. 269 (1763)

Lophoxera, RAF., Fl. Tellur. III. p. 42 (1836)

Gonufas, RAF., Sylva. Tellur. p. 124 (1838)

Celosia argentea, LINN., Sp. Pl. ed. 1. p. 205 (1753); THUNB., Fl. Jap. p. 106 (1784); WIGHT, Ic. Ind. Or. t. 1767 (1852); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 131 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 289 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 318 (1891); MATSUM. et HAY., Enum. Pl. Formos. p. 324 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 72 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 213 (1912); LOESEN, Pfl.-welt. Kiaut. Geb. p. 117 (1918); MORI, Enum. Pl. Cor. p. 140 (1922); MERR., Enum. Philipp. Pl. II. p. 127 (1923), et Enum. Hainan Pl. p. 72 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 72 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 276 (1931)

Nom. Jap. *No-geitô*

Leg. Ipse, Kurio, Jul. 4, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, India.

Note. The species grows in cultivated lands and by the roadside. There is a grave doubt whether the plant has not been introduced from outside.

Amaranthus, (*Amarantus*) LINN., Sp. Pl. ed. 1. 989 (1753); ENDL., Gen. Pl. n. 1972 (1836-40); MOQ., in DC. Prodr. XIII. 2. p. 255 (1849); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 28 (1880); SCHING. in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. a. p. 102 (1893); LEMÉE, Dict. Gen. Pl. Phan. I. p. 186 (1929)

Syn. *Blitum*, LINN., Gen. ed. 1. p. 20 (1737)

Amarantus, LINN., Syst. ed. 10. p. 1268 (1759)

- Bajan*, ADANS., Fam. II. p. 506 (1763)
Roemeria, MOENCH., Meth. p. 341 (1794)
Dimeandra, RAF., Neogenyt. p. 2 (1825)
Albersia, KUNTH, Fl. Berol. ed. 2. p. 144 (1838)
Sarratia, MOQ., in DC. Prodr. XIII. 2. pp. 233 et 268 (1849)
Pentrias, BENTH. et HOOK. f., Gen. Pl. III. 1, p. 28 (1880)

Amaranthus Blitum, LINN., Sp. Pl. ed. 1. p. 990 (1753); MOQ., in DC. Prodr. XIII. 2 p. 263 (1849); MAXIM., Prim. Fl. Amur. pp. 227 et 476 (1859); REGEL, Tent. Fl. Uss. no. 451 (1861); HOOK. f., Fl. Brit. Ind. IV. p. 721 (1885); FORB. et HEMSL., Ind. Fl. Sin. II. p. 319 (1891); KOM., Fl. Mansh. II. p. 164 (1904); NAK., Fl. Kor. II. p. 159 (1911); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 214 (1912); LOESN., Pfl.-welt. Kiaut. Geb. p. 117 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 72 (1929); YAMAZUTA, List Manch. Pl. p. 100 (1930)

Syn. *Amaranthus Blitum*, LINN. var. *oleraceus*, HOOK. f., Fl. Brit. Ind. IV. p. 721 (1885); MATSUM., Ind. Pl. Jap. II. 2. p. 71 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 275 (1931)

Nom. Jap. *Inu-biyu*

Leg. Ipse, Miyanoura

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, Manchuria, China.

Note. The species is found at low altitudes near human dwellings.

Achyranthes, [LINN., Gen. Pl. ed. 1. p. 34 (1737)]
 et Sp. Pl. ed. 1. p. 204 (1753); ENDL., Gen. Pl. n. 1966 (1836-40); MOQ., in DC. Prodr. XIII. 2. p. 309 (1849); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 35 (1880); SCHING., in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. a. p. 112 (1893); LEMÉE, Dict. Gen. Pl. Phan. I. p. 33 (1929)

Syn. *Achiranthus*, P. BR. Hist. Jamaica, p. 180 (1756)

Amaranthulus, HEIST., ex FABRICIUS, Enum. Pl. Hort. Belmstad. ed. 2. p. 358 (1763)

Amorgine, RAF., New Fl. Amer. IV. p. 44 (1836)

Achyranthes japonica, NAK., in Tokyo Bot. Mag. XXXIV. p. 39 (1920); MORI, Enum. Pl. Cor. p. 139 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 72 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 274 (1931)

Syn. *Achyranthes bidentata*, BL. var. *japonica*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 132 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 391 (1875)

Achyranthes bidentata, (non BL.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 132 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 391 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 322 (1891); NAK., Fl. Kor. II. p. 160 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 70 (1912); LOESEN., Pfl.-welt. Kiaut. Geb. p. 117 (1918)

Nom. Jap. *Inokozuti*

Leg. Ipse, Aug. 29, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, China.

Note. The species is found on the edges of forests at low altitudes.

Achyranthes japonica, var. *hachijoensis*, HONDA, in Tokyo Bot. Mag. XLVI. p. 371 (1932)

Nom. Jap. *Teriba-inokozuti*; *Hatizyo-inokozuti*

168 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 76 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 114 (1924); MORI, Enum. Pl. Cor. p. 141 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 165 (1929); YAMAZUTA, List Manch. Pl. p. 102 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 282 (1931)

Nom. Jap. *Zakurosô*

Leg. Ipse, Sitogo, Aug. 18, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species is found on cultivated lands, waste lands and by the roadside, at low altitudes.

Of this family only one cosmopolitan species is found in Yakusima.

Portulacaceae

Portulacaceae, REICHB., Consp. p. 161 (1828); LINDL., Nat. Syst. ed. 2. p. 123 (1836)
Syn. *Portulacae*, JUSS., Gen. Pl. p. 312 (1789); DC., Prodr. III. p. 351 (1828); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 155 (1862)

Portulaca, [LINN., Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 445 (1753); DC., Prodr. III. p. 353 (1828); ENDL., Gen. Pl. n. 5174 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 156 (1862); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. b. p. 59 (1889)

Syn. *Meridiana*, LINN. f., Supp. p. 248 (1781)

Lemia, VAND., Fl. Lusit. et Brasil. Sp. p. 36, t. 2. f. 15 (1788)

Merida, NECK., Elem. II. p. 382 (1790)

Portulacca, HAW., Synops. p. 121 (1812)

Lamia, ENDL., Gen. Pl. p. 949 (1840)

Portulaca oleracea, LINN., Sp. Pl. ed. 1. p. 445 (1753); THUNB., Fl. Jap. p. 192 (1784); LOUR., Fl. Cochinch. p. 293 (1790); DC., Prodr. III. p. 353 (1828); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 167 (1845); MAXIM., Prim. Fl. Amur p. 113 (1859); BENTH., Fl. Hongk. p. 127 (1861); DYER, in HOOK. f. Fl. Brit. Ind. I. p. 246 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 53 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 71 (1886); PALIB., Consp. Fl. Kor. I. p. 44 (1898); ITO et MATSUM., Tent. Fl. Lutch. I. p. 317 (1899); KOM., Fl. Mansh. II. p. 166 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 38 (1906); NAK., Fl. Kor. I. p. 92 (1909), et in Bull. Biogeogr. Soc. Jap. I. p. 257 (1930); GAGNEPAIN, in LECOMTE Fl. Ind. Chin. I. 6. p. 274 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 77 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 41 (1912); MERR., Enum. Philipp. Pl. II. p. 136 (1923), et Enum. Hainan Pl. p. 74 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 283 (1931)

Nom. Jap. *Suberi-hiyu*

Leg. Ipse, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Bonins. Korea, Manchuria, China, Philippines.

Note. The species is found in cultivated lands, and in waste lands, and by the roadside, near the sea level.

| Name of Plant | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|---------|------------|--------------|--------|--------|--------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea |
| | | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Portulaca oleracea</i> , LINN. | + | + | + | + | + | + | + | + | + | + | + | + |

This family has only one representative in this island, which is rather cosmopolitan.

Caryophyllaceae

Caryophyllaceae, REICHB., Consp. p. 206 (1828)

Syn. *Caryophylleae*, B. JUSS., in Hort. Trianon (1759), et ex Gen. Pl. p. LXVIII. et 299 (1789); FENZL., in ENDL. Gen. Pl. p. 955 (1840); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 141 (1862)

Stellaria, LINN., Sp. Pl. ed. 1. p. 421 (1753);

SERINGE, in DC. Prodr. I. p. 396 (1824); ENDL., Gen. Pl. n. 5240 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 149 (1862); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. b. p. 79 (1889)

Syn. *Stellularia* [LINN., Syst. ed. 6 (1749)]

Alsinella, SWARTZ, Summa Veg. Scand. p. 17 (1814) partim

Larbrea, A. ST. HIL., in Mém. Mus. Par. II. p. 248 (1815)

Malachium, FRIES, Fl. Hall. p. 77 (1817)

Stellaria aquatica, SCOP., Fl. Carniol. ed. 2. i. p. 319 (1772); BENTH., Fl. Hongk. p. 21 (1861); FORB. et HEMSL., Ind. Fl. Sin. I. p. 67 (1886); KOM., Fl. Mansh. II. p. 167 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 36 (1906); NAK., Fl. Kor. I. p. 89 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 88 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 40 (1912); HANDEL-MAGZ., Symb. Sin. VII. p. 188 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 299 (1931)

Syn. *Cerastium aquaticum*, LINN., Sp. Pl. ed. 1. p. 439 (1753)

Malachium aquaticum, FRIES, Fl. Hall. p. 77 (1817); MAXIM., in Mém. Biolog. IX. p. 54 (1873)

Nom. Jap. *Ushi-hakobe*

Leg. Y. KUDO! Kurio, Aug. 1907.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōshima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The plant is found in cultivated lands, and in waste lands near the sea level.

***Stellaria diandra*, MAXIM. var. *yakumontana*, MASAMUNE, var. nov.**

Herbae ramosae. Folia petiolata, petiolis 4–10 mm longis, laminis ovato-deltoideis apice acuminatis basi cuneato-truncatis. Flores pedicellati, pedicellis gracilibus ca. 2 mm longis.

Nom. Jap. *Yakusima-sawahakobe*

Leg. Ipse, ca. Kosugidani, Jun. 6, 1928.

Note. The species grows near clear running water in the laurisilvae or in the lauri-aciculisilvae.

***Stellaria media*, CYR., Char. Comm. p. 36 (1784); MIQ., in Ann. Mus. Bot. II. p. 79 (1865); MAXIM., in Mém. Biolog. IX. p. 42 (1873); EDGR. et HOOK. f., in HOOK. f. Fl. Brit. Ind. I. p. 230 (1874); MIY., Fl. Kuril. p. 220 (1890); ITO et MATSUM., Tent. Fl. Lutch. I. p. 313 (1899); KOM., Fl. Mansh. II. p. 169 (1904); NAK., Fl. Kor. I. p. 89 (1909), et in Bull. Biogeogr. Soc. Jap. I. p. 257 (1930); MATSUM., Ind. Pl. Jap. II. 2. p. 89 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 40 (1912); MERR., Enum. Philipp. Pl. II. p. 138 (1923); HANDEL-MAGZ., Symb. Sin. VII. p. 188 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 301 (1931)**

Syn. *Alsine media*, LINN., Sp. Pl. ed. 1. p. 272 (1753); THUNB., Fl. Jap. p. 127 (1784)

Stellaria neglecta, WEIHE; FR. et SAV., Enum. Pl. Jap. I. p. 51 (1875)

Nom. Jap. *Hakobe*

Leg. Y. KUDO! Aug. 1907.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China, Philippines.

Note. The plant is found in the low lands such as cultivated lands or by the roadside.

***Stellaria uliginosa*, MURR., Prodr. Gott. p. 55 (1770); LEDEB., Fl. Ross. I. p. 393 (1842); A. GRAY, Bot. Jap. p. 382 (1859); BENTH., Fl. Hongk. p. 22 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 79 (1865); MAXIM., in Mém. Biolog. IX. p. 49 (1873); EDGEWORTH et HOOK. f., in HOOK. f. Fl. Brit. Ind. I. p. 233 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 51 (1875); ITO et MATSUM., Tent. Fl. Lutch. I. p. 314 (1899); KOM., Fl. Mansh. II. p. 173 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 36 (1906); NAK., Fl. Kor. I. p. 88 (1909); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 40 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 90 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 302 (1931)**

Syn. *Stellaria undulata*, THUNB., Fl. Jap. p. 185 (1784); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 166 (1846)

Larbreia uliginosa, HOOK. f., in Journ. Linn. Soc. I. p. 116 (1857)

Nom. Jap. *Nomino-husuma*

Leg. Ipse, Mart. 21, 1923.

Distr. Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species is found in cultivated fields.

Krascheninikowia, TURCZ., ex. BESSER, in Fl. XVII. I. Beibl. p. 9 (1834); LEMÉE, Dict. Gen. Pl. Phan. III. p. 890 (1931)

- Krascheninikowia heterantha**, MAX., in Mél. Biolog. IX. p. 38 (1872); MATSUM., Ind. Pl. Jap. II. 2. p. 83 (1912); TAKEDA, in Tokyo Bot. Mag. XXVI. p. (342) (1912); KOIDZ., Symb. Fl. Jap. p. 24 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 291 (1931)
Syn. *Krascheninikovia rupestris*, (non TURCZ.) MAX., Fl. As. Or. Fragm. p. 6. (1879)
Stellaria rupestris, (non *K. rupestris*, TURCZ.) HEMSL., in Journ. Linn. Soc. XXIII. p. 69 (1886)
Krascheninikovia heterophylla, (non MIQ.) MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929)
Nom. Jap. *Watigaiso*
Leg. Ipse, Yaedake, Jun. 12, 1928.
Distr. Honsyû, Sikoku, Kyûsyû.
Note. The species is found in the Pseudosasa Owatarii Association, and is not reported further south than this island.

- Cerastium**, [DILL., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 437 (1753); SERING., in DC. Prodr. I. p. 414 (1824); ENDL., Gen. Pl. n. 5241 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 148 (1862); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. i. b. p. 80 (1889); LEMÉE, Dict. Gen. Pl. Phan. II. p. 35 (1930)
Syn. *Centunculus*, ADANS., Fam. II. p. 256 (1763)
Quaternella, EHRH., Beitr. IV. p. 149 (1789)
Doerriena, BORKH., in Phein. Magaz. I. p. 528 (1793)
Myosotis, (TOURN.) ex MOENCH., Meth. p. 224 (1794)
Esmarchia, REICHB., Fl. Germ. exc. p. 793 (1832)
Dufourea, GREN., in Act. Soc. Linn. Bordeaux IX. p. 25 (1837)
Doerriera, STEUD., Nomencl. ed. 2. I. p. 522 (1840)
Pentaple, REICHB., Ic. Fl. Germ. V. p. 37, t. 227 (1841)
Cerastium caespitosum, GILIB. var. **glandulosum**, KUDO, Contr. N. Saghal. p. 35 (1923), et Kita-Karahuto-Syokubutu-Tyôdsasyo p. 122 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929)
Syn. *Cerastium viscosum*, (non LINN.) THUNB., Fl. Jap. p. 188 (1784); FR. et SAV., Enum. Pl. Jap. I. p. 50 (1875), et II. p. 294 (1876)
Cerastium viscosum, LINN. var. *glandulosum*, BOENINGH., Fl. Monast. Westph. n. 565 (1824); MAXIM., in Mél. Biolog. IX. p. 52 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 50 (1875) et II. p. 294 (1876)
Cerastium triviale, LINK. var. *glandulosum*, KOCH, Syn. Fl. Germ. Helv. ed. 2. p. 134 (1843); WILLIAMS, in Bull. Herb. Boiss. VII. p. 132 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 81 (1912)
Cerastium triviale, LINK.; NAK., in Bull. Biogeogr. Soc. Jap. I. p. 257 (1930)
Cerastium vulgatum, LINN. var. *glandulosum*, REGEL.; YAMAZUTA, List Manch. Pl. p. 104 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 288 (1931)
Nom. Jap. *Mimina-gusa*
Leg. Ipse, Jul. 20, 1928.
Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Bonins, Manchuria.
Note. The species is found in cultivated lands or along the roadside.

- Sagina**, [LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 128 (1753); DC., Prodr. I. p. 389 (1824); ENDL., Gen. Pl. n. 5224 (1836-40);

| Names of Plants | Regions | | | | | |
|---|---------------------------------|---------|--------------|------------|---|---|
| | Philippines Bonins Taiwan | Okinawa | Amami-Oshima | Tanegasima | Kyûsyû Prop. Sikoku Honsyû Korea | Ryûkyûs Kyûsyû Yezo & Southern Kuriles Saghalien Northern Kuriles & Kamtschatka Manchuria, Amur & Usuri China |
| <i>Stellaria media</i> , CYR. | + | + | + | + | + | + |
| <i>Stellaria ulginosa</i> , MURR. | | + | + | + | + | + |
| <i>Krascheninikowia heterantha</i> , MAXIM. . . . | | | | | + | |
| <i>Cerastium caespitosum</i> , GILIB. var. <i>glandulosum</i> , KUDO | + | + | + | + | + | + |
| <i>Sagina maxima</i> , A. GRAY | + | + | + | + | + | + |
| <i>Dianthus japonicus</i> , THUNB. | | | | + | + | |
| Total | 8 | 13 | 5 | 7 | 7 | 5 |
| Percentage | 38 | 50 | 63 | 88 | 88 | 63 |

(Southern elements 5)
(Northern elements 7)

Enum. Gen. Dianth., p. 9 (1893); MATSUM., Ind. Pl. Jap. II. 2. p. 81 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 73 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 289 (1931)

Nom. Jap. Huzi-nadesiko

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is found on sandy beaches and rather rarely, and it is not yet found in lands further south than the island.

From the distribution of *Calyophyllaceae* plants indigenous to the island, I formed the opinion that the island is more closely related to the northern lands (Honsyû, Sikoku, Kyûsyû), than to the southern lands (Ryûkyû and Formosa).

Trochodendraceae

Trochodendraceae, PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 21 (1888) p.p.

Syn. Trochodendreae, BENTH. et HOOK. f., Gen. Pl. I. 3, p. 954 (1867) p.p.

Trochodendroideae, HARMS., in Ber. Deutsch. Bot. XV. p. 359 (1897)

Coptis, SALISB., in Trans. Linn. Soc. VIII. p. 305 (1805); ENDL., Gen. Pl. n. 4792 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 8 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 58 (1888); LEMÉE, Dict. Gen. Pl. Phan. II. p. 296 (1930)

Coptis quinquefolia, MIQ. var. *pedatoquinquefolia*, KOIDZ., in Tokyo Bot. Mag. XXXVII. p. 39 (1923)

Syn. *Coptis quinquefolia*, MIQ. f. *ramosa*, MAK., in Tokyo Bot. Mag. XXV. p. 227 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 328 (1931)

Nom. Jap. *Ô-gokayôren*

Leg. Ipse, Kosugidani, Mart. 19, 1923.

Distr. Endemica.

Note. The plant grows as undergrowth in the lauri-aciculisilvae from about 600 m up to 1300 m above the sea level. The variety is reported in Formosa (in YAMAMOTO, Supp. Ic. Pl. Formos. III. p. 26, 1927), but I think it differs from the above mentioned variety and it should be called *Coptis quinquefolia*, var. *Morii*.

Clematis, [DILL. ex LINN., Gen. Pl. ed. 1. p. 163] et Sp. Pl. ed. 1. p. 543 (1753); ENDL., Gen. Pl. n. 4768 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 3 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 62 (1888); LEMÉE, Dict. Gen. Pl. Phan. II. p. 193 (1930)

Syn. *Clematitidis*, (TOURN.) LINN., Syst. ed. 1 (1735)

Muralta, ADANS., Fam. II. p. 460 (1763)

Trigula, NOR., in Verh. Bat. Gen. V. Art. IV. p. 4 (1790)

Clematopsis, BOJ., ex HOOK. Ic. Pl. t. 10 (1837)

Sieboldia, HOFFMGG., ex Linnaea XVI. p. 281 (1842)

Clematis crassifolia, BENTH., Fl. Hongk. p. 7 (1861); KUNTZE, Monogr. Clemat. p. 152 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 3 (1886); HAY., Mat. Fl. Formos. p. 15 (1911), et Ic. Pl. Formos. I. p. 17 (1911); DUNN et TUTCH., Fl. Kwang. and Hongk. p. 26 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 323 (1931); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 77 (1932)

Nom. Jap. *Yama-senninsô*

Leg. Ipse, Onoaida, Sept. 6, 1926.

Distr. Kyûsyû, Tanegasima, Taiwan, China.

Note. I collected the species in the laurisilvae at about 300 m above the sea level.

Clematis Meyeniana, WALP., in Nov. Act. Acad. Nat. Cur. XIX. Supp. I. p. 297 (1843); BENTH., Fl. Hongk. p. 6 (1861); O.KUNTZE, Monogr. Clemat. p. 152 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 5 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 271 (1899); DIELS, Fl. Cent. Chin. p. 332 (1900); HOOK. f., in Curtis. Bot. Mag. t. 7897 (1903); MATSUM. et HAY., Enum. Pl. Formos. p. 5 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 112 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 26 (1912); MERR., Enum. Philipp. Pl. II. p. 142 (1923), et Enum. Hainan Pl. p. 75 (1927); REHDER, Manual Cult. Tree. and Shrub. p. 225 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 325 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 320 (1931); KUDO et MASAMUNE, Gen. Pl. Formos. I. p. 77 (1932)

Nom. Jap. *Yanbaru-senninsô*

Leg. Ipse, Jun. 27, 1927,

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China, Philippines,

Note. I collected the plant in a forest near the sea level. The species is not reported further north than this island.

Clematis paniculata, THUNB., in: Trans. Linn. Soc. II. p. 337 (1793); DC., Prodr. I. p. 3 (1824); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 176 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 1 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 1 (1875); MAK., in Tokyo Bot. Mag. XI. p. 331 (1897); HUTH, in Bull. Herb. Boiss. V. p. 1060 (1897); BOISS., in Bull. Herb. Boiss. VII. p. 581 (1899); NAK., Fl. Kor. I. p. 10 (1909); YABE, Enum. Pl. Manch. p. 52 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 113 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2, p. 326 (1931)

Syn. *Clematis crispa*, (non LINN.) THUNB., Fl. Jap. p. 239 (1784)

Clematis virginica, (non LINN.) THUNB., Fl. Jap. p. 240 (1784)

Clematis Maximowicziana, FR. et SAV., Enum. Pl. Jap. II. p. 261 (1876)

Clematis recta, LINN. var. *paniculata*, THUNB., ex O. KUNTZE Monogr. Clemat. p. 115 (1885)

Clematis parviloba, var. *Maximowicziana*, HATH., in Bull. Herb. Boiss. V. p. 1061 (1897)

Nom. Jap. *Seminsō*

Leg. Ipse, Sept. 1, 1931.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The plant is found in wet but sunny spots near the sea level, and is rather common in Japan.

Clematis Pierotii, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 1. (1867); FR. et SAV., Enum. Pl. Jap. I. p. 2 (1875); MAXIM., in Mém. Biolog. IX. p. 585 (1876); MAK., in Tokyo Bot. Mag. II. p. 220 (1888), et XI. p. 331 (1897); MATSUM., Ind. Pl. Jap. II. 2. p. 114 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 236 (1931)

Syn. *Clematis parviloba*, var. *Pierotii*, HUTH, in Bull. Herb. Boiss. V. p. 1061 (1897)

Nom. Jap. *Kobano-botanzuru*

Leg. Ipse, Sept. 1, 1931.

Distr. Sikoku, Kyūsyū, Okinawa.

Note. The species is often found in wet spots near the sea level.

Ranunculus, [TOURN., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 584 (1753); ENDL., Gen. Pl. n. 4783 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 5 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 64 (1888)

Syn. *Scotanum*, ADANS., Fam. II. p. 459 (1763)

Hecatonia, LOUR., Fl. Cochinch. p. 302 (1790); DC., Syst. I. p. 227 (1818)

Cynomorbium, OPIZ., Fl. Caslar. Cent. III. pp. 255, 261 (1804)

Stylurus, RAF., Fl. Ludor. p. 27 (1817)

Krapfia, DC., Syst. I. p. 228 (1818)

Gampsoceras, STEV., in Bull. Soc. Nat. Mosc. XXV. p. 1. p. 541 (1852)

Glossophyllum, FOURR., in Ann. Soc. Linn. Loyn. Nouv. Sér. XVI. p. 325 (1868)

Ranunculus japonicus, THUNB., in Trans. Linn. Soc. II. p. 337 (1794); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 179 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p.

4. (1867); FR. et SAV., Enum. Pl. Jap. I. p. 7 (1875), et II. p. 266 (1876); KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 314 (1925); YAMAMOTO, Supp. Ic. Pl. Formos. III. p. 30 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); HANDEL-MAGZ., Symb. Sin. VII. p. 301 (1931)

Syn. *Ranunculus asiaticus*, (non LINN.) THUNB., Fl. Jap. p. 241 (1784)

Ranunculus hirtellus, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 4 (1867)

Ranunculus Buergeri, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 5 (1867); MAK. et NEM., Fl. Jap. ed. 2. p. 334 (1931)

Ranunculus acris, (non LINN.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 5 (1867); MORI, Enum. Pl. Cor. p. 159 (1922)

Nom. Jap. *Umano-asigata*

Leg. Ipse, Aug. 6, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea.

Note. The species grows near the sea level in somewhat wet places. It is a common species in Honsyû, Sikoku and Kyûsyû.

Ranunculus Sieboldi, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 5 (1867); HUTH, in Bull. Herb. Boiss. V. p. 1081 (1897); MATSUM., Ind. Pl. Jap. II. 2. p. 121 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 74 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 336 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 302 (1931)

Nom. Jap. *Sima-kitune-no-botan*

Leg. Ipse, Aug. 29, 1926.

Distr. Honsyû, Kyûsyû, Okinawa.

Note. The species is found in low damp places.

Ranunculus Vernyi, FR. et SAV., Enum. Pl. Jap. II. p. 266 (1876); KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 314 (1925); YAMAMOTO, Supp. Ic. Pl. Formos. III. p. 32 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 75 (1929)

Syn. *Ranunculus japonicus*, (non THUNB.) LAGSD., ex FISCH. in DC. Prodr. I. p. 38 (1824); FORB. et HEMSL., Ind. Fl. Sin. I. p. 14 (1886); MAK., in Tokyo Bot. Mag. XIII. p. 322 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 8 (1906); HAY., Ic. Pl. Formos. I. p. 28 (1911); MAK. et NEM., Fl. Jap. ed. 1. p. 980 (1925)

Ranunculus ternatus, (non THUNB.) DC., Prodr. I. p. 31 (1824); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 179 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 4 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 7 (1875)

Ranunculus ternatus, form. *Vernyi*, FR. et SAV., Enum. Pl. Jap. II. p. 266 (1876)

Ranunculus pensylvanicus, LINN. var. *japonicus*, MAXIM., in Act. Hort. Petrop. XI. p. 25 (1889); ITO et MATSUM., Tent. Fl. Lutch. I. p. 276 (1899); NAK., Fl. Kor. I. p. 22 (1909); YABE, Enum. Pl. Manch. p. 53 (1912)

Ranunculus Vernyii, FR. et SAV. var. *japonicus*, NAK., in Tokyo Bot. Mag. XLII. p. 20 (1928); MAK. et NEM., Fl. Jap. ed. 2. p. 337 (1931)

Nom. Jap. *Kitune-no-botan*

Leg. Ipse, Yudomari, April 2, 1927.

Distr. Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria.

Note. The species grows near the sea level, in wet lands especially in rice fields.

Ranunculus yaegatakenis, MASAMUNE, in Tokyo Bot. Mag. XLIII. p. 251 (1929), et Prel. Rep. Veg. Yak. p. 75 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 337 (1931)

Nom. Jap. *Hime-kitune-no-botan*

| Names of Plants | Regions | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------|-----------------------|--------|--------|-------|-------------------------|-----------|------------------------------|--------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūshū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Ussuri |
| <i>Ranunculus Vernyi</i> , FR. et SAV. | | + | + | + | + | + | + | + | + | + | | | + | + |
| <i>Ranunculus yaegataensis</i> , MASAMUNE . . . | | | | | | | | | | | | | | |
| <i>Ranunculus yakushimensis</i> , MASAMUNE . . | | | | | | | | | | | | | | |
| <i>Thalictrum yakushimense</i> , KOIDZ. | | | | | | | | + | | | | | | |
| Total 11 | 1 | 5 | 5 | 4 | 5 | 6 | 5 | 4 | 3 | 2 | | | 2 | 4 |
| Percentage | 9 | 45 | 45 | 36 | 45 | 54 | 45 | 36 | 27 | 18 | | | 18 | 36 |
| (Southern elements 7) | | | | | | | (Northern elements 8) | | | | | | | |

In Yakusima there are found eleven Ranunculaceous plants of which three are endemic. So phytogeographically the island is separated from the surrounding regions in respect of this family. But the remaining seven plants, except *Thalictrum yakushimensis* which is found in Sikoku, are all common in both northern and southern lands besides Yakusima. Therefore the island shows some relationship with the northern regions which include Sikoku.

Lardizabalaceae

Lardizabalaceae, LINDL., Veg. Kingd. p. 303 (1847)

Syn. *Lardizabaleae*, DC., Prodr. I. p. 95 (1824); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 42 (1862)

Stauntonia, DC., Syst. I. p. 513 (1818); ENDL., Gen. Pl. n. 4701 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 42 (1862); PRANTL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 69 (1888)

Stauntonia hexaphylla, DECNE., in Ann. Soc. Nat. sér. 2. XII. p. 105 (1839); SIEB. et ZUCC., Fl. Jap. I. p. 140, t. 76 (1841); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 9 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 21 (1875); MAXIM., in Engl. Bot.

Jahrb. VI. p. 58 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 30 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 289 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 17 (1906); NAK., Fl. Kor. I. p. 40 (1909); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 32 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 75 (1929); MAK. et NEM., Pl. Jap. ed. 2. p. 344 (1931)

Syn. *Raiania hexaphylla*, THUNB., Fl. Jap. p. 149 (1784)

Nom. Jap. *Mube*

Leg. Ipse, Jul. 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. This liane is found in the laurisilvae and in the lauri-aciculisilvae.

Akebia, DECNE., in Arch. Mus. Paris. I. p. 195, t. 13 (1837); ENDL., Gen. Pl. n. 4700 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 42 (1862); PRANTL, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 69 (1888); LEMÉE, Dict. Gen. Pl. Phan. I. p. 135 (1929)

Akebia quinata, DECNE., in Ann. Soc. Nat. Sér. II. XII. p. 107 (1839); SIEB. et ZUCC., Fl. Jap. I. p. 143, t. 77 (1841); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 9 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 21 (1875); HANCE, in Journ. Bot. XVI. p. 8 (1878); FORB. et HEMSL., Ind. Fl. Sin. I. p. 30 (1886); MATSUM., Ind. Pl. Jap. II. 2. p. 127 (1912); NAK., Fl. Kor. I. p. 40 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 75 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 344 (1931)

Syn. *Raiania quinata*, THUNB., Fl. Jap. p. 148 (1784)

Nom. Jap. *Akebi*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. Dr. KUDO told me that he had once collected this plant in the island. It is not yet found in lands further south than this island.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|--------|--------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea |
| | | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Stauntonia hexaphylla</i> , DECNE. | | | + | + | + | + | + | + | + | + | + | + |
| <i>Akebia quinata</i> , DECNE. | | | | | | | | + | + | + | + | + |

So far as *Lardizabalaceae* are concerned, *Akebia quinata* having its southern limit to this island the island has a closer relationship

into consideration the flora of this island is closely related to the northern floral regions.

Menispermaceae

Menispermaceae, DC., Prodr. I. p. 95 (1824); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 30 (1862)

Syn. Menispermum, JUSS., Gen. Pl. p. 284 (1789)

Sinomenium, DIELS, in ENGL. Pfl.-reich. IV. 94 (Heft 46) p. 254 (1910)

Sinomenium acutum, REHDER et WILLSON, in SARGENT, Pl. Wil. I. p. 387 (1913); CHUN., Cat. Tree. and Shrub. Chin. p. 53 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 352 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 261 (1931)

Syn. Menispermum acutum, THUNB., Fl. Jap. p. 193 (1784); LAM., Encycl. Meth. Bot. IV. p. 96 (1797)

Cocculus diversifolius, (non DC.) FR. et SAV., Enum. Pl. Jap. I. p. 20 (1875); MAXIM., in Bull. Acad. Sci. St. Pétr. 3 XIX. p. 71 t. 2. ff. 21-35 (1883) et in Mém. Biolog. XI. p. 652 (1883)

Cebatha Miqueliana, O. KUNTZE, Rev. Gen. Pl. I. p. 9 (1891)

Cocculus heterophyllus, HEMSL. et WILSON, in Kew Bull. Misc. Inf. p. 150 (1906)

Menispermum diversifolium, (non PRANT.) GAGNEPAIN, in Bull. Soc. Bot. Fr. LV. p. 38 (1908)

Cocculus acutus, MAK., in Tokyo Bot. Mag. XXII. p. 172 (1908)

Sinomenium diversifolium, DIELS, in ENGL. Pfl.-reich. IV. 94. (Heft 46) p. 254 (1910); HEMSL., in Gard. Chron. sér. 3, LII. p. 402 f. 178 (1912); MORI, Enum. Pl. Cor. p. 165 (1922)

Nom. Jap. Otuzura-huzi

Leg. Ipse, ca. Kosugidani.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, China.

Note. The species is found in the laurisilvae and the lauri-aciculisilvae.

Cocculus, DC., Syst. ed. 1. p. 515 (1818), et Prodr.

I. p. 96 (1824); ENDL., Gen. Pl. n. 4687 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 36 (1862), et p. 961 (1867); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 84 (1888); LEMÉE, Dict. Gen. Pl. Phan. II. p. 221 (1930)

Syn. Cebatha, FORSK., Fl. Aegypt-Arab. p. 172 (1775); O. KUNTZE, Rev. Gen. Pl. I. p. 9 (1891)

Nephroia, LOUR. Fl. Cochinch. p. 565 (1790)

Baumgartia, MOENCH, Meth. p. 650 (1794)

Androphylax, WENDL., Bat. Beobacht. p. 38 (1798)

Wendlandia, WILLD., Sp. Pl. II. p. 275 (1799); PURSH, Fl. Amer. Sept. I. p. 252 (1814)

Braunea, WILLD., Sp. Pl. IV. p. 797 (1805)

Cocculidium, SPACH, Hist. Nat. Végét. VIII. p. 16 (1839)

Adenocheton, FENZL., in Flora XXV. p. 312 (1844)

Nephroica, MIERS., in Ann. Nat. Hist. 2 sér. VII. p. 42 (1851)

Holopeira, MIERS., in Ann. Nat. Hist. 2 sér. VII. p. 42 (1851)

Bricchetia, PAX., in Ann. Ist. Bot. Roma VI. p. 181 (1897)

Cocculus laurifolius, DC., Syst. I. p. 530 (1818), et Prodr. I. p. 100 (1824); COLEB., in Trans. Linn. Soc. XIII. p. 65 (1822); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 10 (1867); HOOK. f., Fl. Brit. Ind. I. p. 101 (1872); FR. et SAV., Enum. Pl. Jap. I. p. 19 (1875); ITO et MATSUM., Tent. Fl. Lutch. I. p. 285 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 14 (1906); DIELS, in ENGL. Pfl.-reich. IV. p. 94 (Heft. 46) p. 239 (1910); MATSUM., Ind. Pl. Jap. II. 2. p. 132 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 31 (1912); CHUN., Cat. Tree. and Shrub. Chin. p. 52 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 75 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 351 (1931)

Syn. *Menispermum laurifolium*, ROXB., Fl. Ind. III. p. 815 (1832)

Cocculus angustifolius, HASSK., Cat. Pl. Hort. Bogor. p. 172 (1844)

Holopeira laurifolia, MIERS., in Ann. Nat. Hist. 3 sér. XIX. p. 29 (1867)

Holopeira australis, MIERS., in Ann. Nat. Hist. 3 sér. XIX. p. 29 (1867), et in Contrib. Bot. III. p. 277 (1871)

Holopeira fusiformis, MIERS., in Ann. Nat. Hist. 3 sér. XIX. p. 29 (1867), et in Contrib. Bot. III. p. 278 (1871)

Menispermum australe, ZUCC., ex MIERS. in Contrib. Bot. III. p. 227 (1871)

Cebatha laurifolia, O. KUNTZE, Rev. Gen. Pl. I. p. 9 (1891)

Cocculus laurifolius, var. *bariensis*, GAGNEPAIN, in LECOMT Fl. Gén. Cochinch. I. p. 141 (1908)

Nom. Jap. *Kōsū-yaku*

Leg. Ipse, Jun. 26, 1928.

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China, Himalaya, South India, Java, Philippines.

Note. The plant grows as undergrowth in the laurisilvae near the sea level.

Cocculus trilobus, DC., Syst. I. p. 522 (1818), et Prodr. I. p. 98 (1824); DIELS, in ENGL. Pfl.-reich. IV. 94 (Heft. 46.) p. 232 (1910); MERR., Enum. Philipp. Pl. II. p. 149 (1923); CHUN., Cat. Tree. and Shrub. Chin. p. 53 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929); YAMAZUTA, List Manch. Pl. p. 124 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 351 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 260 (1931)

Syn. *Menispermum orbiculatum*, (non LINN.) THUNB., Fl. Jap. p. 194 (1784)

Menispermum trilobum, THUNB., Fl. Jap. p. 194 (1784); WILLD., Sp. Pl. IV. p. 825 (1805)

Cocculus Thunbergii, DC., Syst. I. p. 524 (1818), et Prodr. I. p. 98 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 10 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 19 (1875); MAXIM., in Mém. Biolog. XI. p. 651 (1883); FORB. et HEMSLE., Ind. Fl. Sin. I. p. 28 (1889); PALIBIN, Consp. Fl. Kor. I. p. 19 (1898); MATSUM. et HAY., Enum. Pl. Formos. p. 14 (1906); NAK., Fl. Kor. I. p. 39 (1909), et II. p. 436 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 132 (1912)

Nephroica caudata, MIERS., in Ann. Nat. Hist. 3 sér. XIX. p. 26 (1867), et in Contrib. Bot. III. p. 263 (1871)

Nephroica Thunbergii, MIERS., in Ann. and Mag. Nat. Hist. Sér. II. 7 p. 26 (1851)

Nephroica triloba, MIERS., in Ann. and Mag. Nat. Hist. Sér. II. 7. p. 42 (1851)

Holopeira fecunda, MIERS., in Contrib. Bot. III. p. 275 (1871)

Cebatha orbiculata, O. KUNTZE, Rev. Gen. Pl. I. p. 9 (1891); SCHNEID., Ill. Handb. Luabholzk. I. p. 327 (1906)

Nom. Jap. *Aotuzura-huzi*

Leg. A. KIMURA! Aug. 6, 1922.

Distr. Yezo, Honshû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. The species is found in the waste lowlands, by the roadside on the edges of forests or on the river banks.

Stephania, LOUR., Fl. Cochinch. p. 608 (1790), et ed. WILLD. p. 746 (1793); ENDL., Gen. Pl. n. 4694 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 37 (1862); BAILL., Hist. Pl. p. 42 (1872); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 84 (1891); DIELS, in ENGL. Pfl.-reich. IV. 94 (Heft. 46) p. 259 (1910)

Syn. *Clypea*, BL., Bijdr. p. 26 (1825); MIERS., in Ann. Nat. Hist. 3 sér. XVIII. p. 17 (1866), et Contrib. Bot. III. p. 205, Pl. 118 (1871)

Stenaphia, A. RICH., Tent. Fl. Abyss. I. p. 9 (1841)

Homocnemis, MIERS., in Ann. Nat. Hist. 2. sér. VII. p. 40 (1851), 3 sér. XIV. p. 373 (1864), et Contrib. Bot. III. p. 126 (1871)

Ileocarpus, MIERS., in Ann. Nat. Hist. 2 sér. VII. p. 40 (1851), 3 sér. XIV. p. 372 (1864), et in Contrib. Bot. III. p. 124, Pl. 113 (1871)

Perichasma, MIERS., in Ann. Nat. Hist. 3 sér. XVIII. p. 21 (1866), et in Contrib. Bot. III. p. 247, Pl. 123 (1871)

Stephania japonica, MIERS., in Ann. Nat. Hist. 3 sér. XVIII. p. 14 (1866), et in Contrib. Bot. III. p. 213 (1871); O. KUNTZE, Rev. Gen. Pl. I. p. 9 (1891) partim.; DIELS, in ENGL. Pfl.-reich. IV. 94 (Heft. 46) p. 277 (1910); MERR., Enum. Philipp. Pl. II. p. 149 (1923), et Enum. Hainan Pl. p. 76 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 353 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 261 (1931)

Syn. *Menispermum japonicum*, THUNB., Fl. Jap. p. 195 (1784)

Cocculus japonicus, DC., Syst. I. p. 516 (1818), et Prodr. I. p. 96 (1824); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 189 (1845)

Cissampelos psilophylla, PRESL., Reliq. Haenk. II. p. 80 (1835)

Stephania hypoglauca, MIERS., in Ann. Nat. Hist. 3. sér. XVIII. p. 15 (1866), et in Contrib. Bot. III. p. 227 (1871)

Clypea effusa, MIERS., in Ann. Nat. Hist. 3. sér. XVII. p. 270 (1866), et in Contrib. Bot. III. p. 207 (1871)

Stephania appendiculata, MIERS., in Ann. Nat. Hist. 3. sér. XVIII. p. 15 (1866), et in Contrib. Bot. III. p. 221 (1871)

Stephania hernandifolia, (non WALP.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 10 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 20 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 29 (1886); MATSUM. et HAY., Enum. Pl. Formos. p. 16 (1906)

Stephania discolor, SPRENGEL; MATSUM., Ind. Pl. Jap. II. 2. p. 133 (1912); MORI, Enum. Pl. Cor. p. 165 (1922)

Nom. Jap. *Hasunoha-kazura*

Leg. Ipse, Jun. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. The species is found near forest edges, and in the waste lands at low altitudes.

Kadsura, (KAEMPF.) ex JUSS., in Ann. Mus. Paris. XVI. p. 340 (1810); DC., Prodr. I. p. 83 (1824); ENDL., Gen. Pl. n. 4731 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 19 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 18 (1888); LEMÉE, Dict. Gen. Pl. Phan. III. p. 832 (1931)

Syn. *Pulcheria*, NOR., in Verh. Batav. Gen. V. ed. 1. Art. IV. p. 3 (1790)

Cadsura, SPRENG., Syst. II. p. 642 (1825)

Sarcocarpon, BL., Bijdr. p. 21 (1825)

Cosbaea, LEM., Ill. Hort. II. Misc. p. 71 (1855)

Panslowia, WIGHT, ex PFEIFFER Nom. 11. p. 581 (1874)

Kadsura japonica, JUSS., in Ann. Mus. Par. XVI. p. 340 (1810); SIEB. et ZUCC., Fl. Jap. I. p. 40 t. 17 (1836), et Fl. Jap. Fam. Nat. I. p. 188 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 91 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 18 (1875); ITO et MATSUM., Tent. Fl. Lutch. I. p. 285 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 12 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 93 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 29 (1912); MORI, Enum. Pl. Cor. p. 165 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 354 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 245 (1931)

Syn. *Uvaria japonica*, LINN., Sp. Pl. ed. 1. p. 536 (1753); THUNB., Fl. Jap. p. 237 (1784)

Kadsura chinensis, HANCE, in BENTH. Fl. Hongk. p. 8 (1861); FORB. et HEMSL., Ind. Fl. Sin. I. p. 25 (1886)

Nom. Jap. *Sanekazura*

Leg. Ipse, Kosugidani, ca. 600 m. alt.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in the lauri-aciculisilvae and in the laurisilvae, and is rather common in South Japan.

Illicium, LINN., Syst. ed. 10 (1759); DC., Prodr. I. p. 77 (1824); ENDL., Gen. Pl. n. 4743 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 18 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 18 (1888); LEMÉE, Dict. Gen. Pl. Phan. III. p. 744 (1931)

Syn. *Badianifera*, [LINN., Mat. Med. p. 180 (1749)] O. KUNTZE, Rev. Gen. Pl. I. p. 6 (1891)

Cymbostemon, SPACH., Hist. Nat. Veg. Phan. VII. p. 444 (1839)

Illicium japonicum, SIEB., Syn. Pl. Oec. Jap. p. 50 (1830); KOIDZ., in Tokyo Bot. Mag. XLIV. p. 96 (1930)

Syn. *Illicium religiosum*, SIEB. et ZUCC., Fl. Jap. I. p. 5. t. 1 (1835); Bot. Mag. t. 3965 (1843); FORB. et HEMSL., Ind. Fl. Sin. I. p. 23 (1886); MAK. et NEM., Fl. Jap. ed. 2. p. 354 (1931)

Illicium anisatum, (non LINN.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 257 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 15 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 23 (1886); MATSUM. et HAY., Enum. Pl. Formos. p. 9 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 93 (1912); MORI, Enum. Pl. Cor. p. 165 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929)

Nom. Jap. *Sikimi*

Leg. Ipse, April. 5, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in the laurisilvae or in the lauri-aciculialilvae, from the sea level up to about 1500 m, and is rather common in South Japan.

var. *rosea*, (MAK.) MASAMUNE, comb. nov.

Syn. *Illicium anisatum*, LINN. var. *rosea*, MAK., in Journ. Jap. Bot. III. p. 15 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929)

Illicium religiosum, var. *rosea*, MAK., in Journ. Jap. Bot. V. p. 17 (1928); MAK. et NEM., Fl. Jap. ed. 2. p. 354 (1931)

Nom. Jap. *Usubenî-sikimi*

Leg. Ipse, April, 5, 1927.

Distr. Sikoku.

Note. The variety is found in the laurisilvae or in the lauri-aciculialilvae, and is not yet found in lands further south than Yakusima.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|--------|--------|--------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea |
| | | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamitchatka |
| | | | | | | | | | | | | Manchuria, Amur & Usuri |
| | | | | | | | | | | | | China |
| <i>Michelia compressa</i> , MAXIM. | | + | + | + | | | + | + | + | + | + | |
| <i>Kadsura japonica</i> , JUSS. | | + | + | + | + | + | + | + | + | + | + | |
| <i>Illicium japonicum</i> , SIEB. | | + | + | + | + | + | + | + | + | + | + | |
| <i>I. j.</i> var. <i>rosea</i> , MASAMUNE | | | | | | | | + | | | | |

Illicium japonicum, var. *rosea* having its southern limit in this island, it may be said Yakusima is closely related to the northern floral regions in respect of this family.

Lauraceae

Lauraceae, LINDL., Veg. Kingd. p. 535 (1847); MEISS., in DC. Prodr. XV. 1. p. 1 (1864)

Cinnamomum, [TOURN., ex LINN. Syst. ed. 1 (1735)] BL., Bijdr. p. 568 (1825); ENDL., Gen. Pl. n. 2023 (1836-40); BENTH. et

HOOK. f., Gen. Pl. III. 1. p. 155 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 113 (1889); LEMÉE, Dict. Gen. Pl. Phan. II. p. 166 (1930)

Syn. Camphora, NOR., in Verh. Bat. Gen. V. ed. 1. Art. IV. p. 1 (1790)

Septina, NOR., in Verh. Bat. Gen. V. ed. 1. Art. IV. p. 3 (1790)

Cinnamomum Camphora, SIEB., Syn. Pl. Oec. Jap. p. 23 (1830); KOIDZ., Fl. Symb. Or. As. p. 22 (1930); HANDEL-MAGZ., Symb. Sin. VII. p. 248 (1931)

Syn. Laurus Camphora, LINN., Sp. Pl. ed. 1. p. 369 (1753); HOUTTUYN, Pflanzensyst. I. p. 517 (1777); THUNB., Fl. Jap. p. 172 (1784); LOUR., Fl. Cochinch. ed. 1. p. 249 (1790); LAM., Encycl. III. p. 445 (1791); BL., Bijdr. p. 558 (1825)

Persea Camphora, SPRENG., Syst. Veg. II. p. 268 (1825)

Camphora officinarum, NEES. von ESENBECK, in WALL. Pl. As. Rar. II. p. 72 (1831), et Syst. Lour. p. 88 (1836)

Cinnamomum Camphora, NEES. et EBERM., Handb. Med-Pharm. Bot. II. p. 430 (1831); MEISSN., in DC. Prodr. XV. 1. p. 24 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 195 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 411 (1785); FORB. et HEMSL., Ind. Fl. Sin. II. p. 371 (1891); MATSUM. et HAY., Enum. Pl. Formos. p. 349 (1906); HAY., Fl. Mont. Formos. p. 189 (1908); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 223 (1912); LECOMTE, in Nouv. Arch. Mus. Paris. 5. sér. V. p. 73 (1913), et Fl. Ind. Chin. V. 2. p. 110 (1914); GAMBLE, in SARGENT Pl. Wilson. II. p. 68 (1914); MORI, Enum. Pl. Cor. p. 166 (1922); CHUN., Cat. Tr. and Shrub. Chin. p. 58 (1924); WALDER, in Lingn. Sc. Journ. VI. p. 64 cum f. 1928; MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 364 (1931)

Camphora japonica, RAFIN., Sylv. Tellur. p. 136 (1838)

Camphora officinalis, STEUD., Nomencl. Bot. ed. 2. I. p. 271 (1840)

Nom. Jap. Kusunoki

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The inhabitants of this island said that the plant *Camphora* flourished in the island, but in recent times it was cut down in order to take camphor from it and that natural forests of it can no longer be seen. Some specimens are still found near the village shrine and other places.

Cinnamomum daphnoides, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 202 (1846); MEISSN., in DC., Prodr. XV. 1. p. 22 (1864); KOIDZ., in Tokyo Bot. Mag. XL. p. 343 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 365 (1931)

Syn. Cinnamomum sericeum, SIEB., Syn. Pl. Oecon. Jap. p. 24 (1830) nomen; MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 269 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 411 (1875); MAXIM., in Mém. Biolog. XII. p. 537 (1886); MATSUM., Ind. Pl. Jap. II. 2. p. 136 (1912)

Nom. Jap. Maruba-mkkei

Leg. Ipse, Jul. 26, 1928.

Distr. Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa.

Note. Near the sea beaches the species is often found in abundance, and in some places it makes nearly pure stand.

Cinnamomum japonicum, SIEB., in Verh. Gen. Batav. XII. p. 23 (1830); NAK., in Tokyo

Bot. Mag. XLI. p. 517 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 365 (1931)

Syn. *Laurus Camphora*, (non LINN.) THUNB., Fl. Jap. p. 172 (1784) p.p.

Cinnamomum pedunculatum, NEES, Syst. p. 79 (1836); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 16 (1864), et II. p. 195 (1866); MEISSN., in DC. Prodr. XV. 1. p. 16 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 410 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 372 (1891); MATSUM. et HAY., Enum. Pl. Formos. p. 350 (1906); DUNN et TUTCH., Fl. Kwangt. and Hong. p. 223 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 135 (1912); MORI, Enum. Pl. Cor. p. 167 (1922); MERR., Enum. Hainan Pl. p. 79 (1927); MAK. et NEM., Fl. Jap. ed. 1. p. 924 (1925)

Nom. Jap. *Yabu-nikkei*

Leg. Ipse, Jul. 15, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is often found in the laurisilvae nearly from the sea level up to about 1000 m and is rather common in South Japan.

Machilus, NEES, in WALL. Pl. As. Rar. II. p. 70 (1831); ENDL., Gen. Pl. n. 2028 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 156 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 115 (1889); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 228 (1932)

Machilus japonica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 202 n. 705 (1846); MEISSN., in DC., Prodr. XV. 1. p. 42 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 195 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 412 (1875); MAXIM., in Mém. Biolog. XII. p. 536 (1886); SHIRASAWA, Ic. For. Tree. Jap. ed. 2. II. p. 63, t. 20, ff. 12-20 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 370 (1931)

Syn. *Machilus Thunbergii*, SIEB. et ZUCC., var. *japonica*, YATABE, in Tokyo Bot. Mag. VI. p. 177 (1892), et Ic. Fl. Jap. I. 3. p. 195, Pl. XLVIII. (1893); MATSUM., Ind. Pl. Jap. II. 2. p. 139 (1912)

Machilus longifolia, BL.; MORI, Enum. Pl. Cor. p. 167 (1922)

Nom. Jap. *Aogasi*

Leg. Ipse, Aug. 3, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The species is found in the lauri-aciculisilvae or in the laurisilvae.

Machilus Thunbergii, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 202, n. 704 (1846); MEISSN., in DC. Prodr. XV. 1. p. 42 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 195 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 411 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 377 (1891); PALIBIN, Consp. Fl. Kor. II. p. 185 (39) (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 351 (1906); SHIRASAWA, Ic. For. Tree. Jap. ed. 2. I. p. 130 t. 43. ff. 1-14 (1911); NAK., Fl. Kor. II. p. 177 (1911); DUNN et TUTCH., Fl. Kwang. and Hongk. p. 224 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 139 (1912); LECOMTE, Fl. Ind. Chin. V. 2. p. 123 (1914); CHUN., Cat. Tree. and Shrub. Chin. p. 59 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 371 (1931)

Syn. *Laurus indica*, (non LINN.) THUNB., Fl. Jap. p. 173 (1784)

Machilus rimosa, BL., Mus. Bot. Lugd. Bat. I. p. 330 (1851); BENTH., Fl. Hongk. p. 291 (1861)

Nom. Jap. *Tabunoki*

Leg. Ipse, Onoaida, Sept. 5, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China.

Note. This is one of the members that constitute the laurisilvae and the lower part of the lauri-aciculisilvae.

Actinodaphne, NEES, in WALL. Pl. As. Rar. II. p. 68 (1831); ENDL., Gen. Pl. n. 2064 (1836-40); MEISN., in DC. Prodr. XV. 1. p. 210 (1864); BENTH. et HOOK. f., Gen. Pl. III. p. 160 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 119 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 59 (1929)

Actinodaphne lancifolia, MEISSN., in DC. Prodr. XV. 1. p. 211 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 413 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 134 (1912); MORI, Enum. Pl. Cor. p. 166 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 362 (1931)

Syn. *Daphnidium lancifolium*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 207, n. 717 (1846)

Litsea lancifolia, VILLAR, in BLANCO, Fl. Filip. ed. 3. Nov. App. p. 181 (1880); FORB. et HEMSL., Ind. Fl. Sin. II. p. 382 (1891); MATSUM. et HAY., Enum. Pl. Formos. p. 352 (1906); SHIRASAWA, Ic. For. Tree. Jap. ed. 2. II. p. 64 t. 20 ff. 1-11 (1912); CHUN., Cat. Tree. and Shrub. Chin. p. 60 (1924)

Nom. Jap. *Kagonoki*

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in the laurisilvae.

Actinodaphne longifolia, NAK., in Tokyo Bot. Mag. XLI. p. 517 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 76 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 362 (1931)

Syn. *Machilus? longifolia*, BL., in Mus. Bot. Lugd. Bat. I. p. 331 (1851); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 195 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 412 (1875); MAXIM., in Mém. Biolog. XII. p. 537 (1886), et in Bull. Akad. St. Petersb. XXXI. p. 97 (1881)

Iososte acuminata, BL., in Mus. Bot. Lugd. Bat. I. p. 331 (1851)

Actinodaphne acuminata, MEISSN., in DC. Prodr. XV. 1. p. 211 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 196 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 413 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 134 (1912); MAK. et NEM., Fl. Jap. ed. 1. p. 919 (1925)

Nom. Jap. *Aokagonoki*

Leg. Ipse, Kosugidani, Jul. 22, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa.

Note. The plant is found in the laurisilvae or in the lower part of the lauri-aciculisilvae.

Neolitsea, (BENTH.) MERR., in Philip. Journ. Sc. I. Supp. p. 56 (1906); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 691 (1932)

Syn. *Litsea*, LAM., sect. 3 *Neolitsea*, BENTH., in BENTH. et HOOK. f. Gen. Pl. III. 1. p. 161 (1880)

Tetradenia, (non BENTH.) NEES, in WALL. Pl. As Rar. p. 61 (1831), et Syst. Laur. p. 355 (1836); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 119 (1891) p.p.

Neolitsea aciculata, KOIDZ., in Tokyo Bot. Mag. XXXII. p. 258 (1918)

Syn. *Litsaea aciculata*, BL., Mus. Bot. Lugd. Bat. I. p. 347 (1851); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 196 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 414 (1875)

Tetradenia foliosa, (non NEES.) MATSUM., Ind. Pl. Jap. II. 2. p. 140 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 374 (1931)

Nom. Jap. *Inu-gasi*

Leg. Ipse, Kosugidani, Mart. 28, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. The species attains its maximum flourishing point in the laurisilvae and is also found in the lauri-aciculisilvae.

Neolitsea sericea, KOIDZ., in Tokyo Bot. Mag. XL. p. 343 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929)

Syn. *Laurus sericea*, BL., Bijdr. II. p. 554 (1826)

Litsea glauca, SIEB., Synop. Pl. Oecon. Jap. p. 24 (1830) nomen; BL., Mus. Bot. Lugd. Bat. I. p. 347 (1851); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 196 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 413 (1875)

Tetradenia glauca, MATSUM., Ind. Pl. Jap. II. 2. p. 140 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 374 (1931)

Malapoenna Sieboldii, O. KUNTZE; MORI. Enum. Pl. Cor. p. 167 (1922)

Neolitsea Sieboldii, NAK., in Tokyo Bot. Mag. XLI. p. 520 (1927)

Nom. Jap. *Sirodama*

Leg. Ipse, Nakama, Jul. 6, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The plant is collected in low lands near the sea level on rare occasions.

Litsea, LAM., Encycl. III. p. 574 (1789); ENDL.,

Gen. Pl. n. 2066 (1836-40); MEISSN., in DC. Prodr. XV. I. p. 220 (1864); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 161 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 119 (1889); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 124 (1932)

Syn. *Malapoenna*, ADANS., Fam. II. p. 447 (1763)

Glabraria, LINN., Mant. II. p. 156 (1771)

Tomex, THUNB., Nov. Gen. Pl. III. p. 65 (1783)

Hexanthus, LOUR., Fl. Cochinch. p. 195 (1790)

Fiwa, J. F. GMEL., Syst. II. p. 745 (1791)

Berrya, KLEIN, ex WILLD. Sp. Pl. III. p. 840 (1800)

Darwinia, DENNST., Schluess. Hort. Malab. p. 31 (1818)

Fiwa, STEUD., Nomencl. ed. 2. I. p. 642 (1841)

Litsea japonica, MIRB., Hist. Nat. Pl. ed. 2. XI. p. 150 (1800-6); JUSS., in Ann. Mus. Par. VI. p. 212 (1805); POIR., in Lam. Encycl. Supp. III. p. 480 (1823); FORB. et HEMSL., Ind. Fl. Sin. II. p. 382 (1891); NAK., Fl. Kor. II. p. 177 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 138 (1912); SHIRAZAWA, Ic. For. Tree. Jap. ed. 2. II. p. 69. t. 22. ff. 1-8 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929)

Syn. *Tetranthera japonica*, SPRENG, Syst. Veg. II. p. 266 (1825); SIEB. et ZUCC., Fl. Jap. I. p. 166, t. 87 (1841), et t. 100, f. 2 (1841); MEISSN., in DC. Prodr. XV. 1. p. 181 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 412 (1875)

Tomex japonica, THUNB., Fl. Jap. p. 190 (1784), et Ic. Pl. Jap. III. t. 7 (1801)

Tetradenia japonica, (MIRB.) MAK. et NEM., Fl. Jap. ed. 2. p. 375 (1931)

Nom. Jap. *Hamabiwa*

Leg. Ipse, Onoaida, Jul. 19, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The species often makes its consociation in the coast lands.

Lindera, THUNB., Nov. Gen. Pl. III. p. 44 (1783), et Fl. Jap. pp. 9, 145, t. 21 (1784); ENDL., Gen. Pl. n. 6848 (1836-40); MEISSN., in DC. Prodr. XV. 1. p. 243 (1864); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 163 (1880) p.p.; PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 123 (1889) p.p.; LEMÉE, Dict. Gen. Pl. Phan. IV. p. 106 (1932)

Syn. *Calosmon*. BERCHT, et PRESL, Postlin. II. p. 71 (1825)

Lindera citrata, KOIDZ., in Tokyo Bot. Mag. XL. p. 343 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 368 (1931)

Syn. *Litsea citrata*, BL., Bijdr. II. p. 565 (1826)

Benzoin citriodora, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 206 n. 711 (1846)

Aperula citriodora, BL., in Mus. Bot. Lugd. Bat. I. p. 366 (1851)

Lindera citriodora, FORB. et HEMSL., Ind. Fl. Sin. II. p. 387 (1891); MATSUM., Ind. Pl. Jap. II. 2. p. 136 (1912), excl. Pl. ex Formosa.

Benzoin citrata, KOIDZ., in Tokyo Bot. Mag. XL. p. 343 (1926)

Nom. Jap. *Aomosi*

Leg. Ipse, Sitogo, Sept. 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species is found in the clearings of the laurisilvae or in the lower part of the lauri-aciculisilvae, often as an invader.

Lindera Thunbergii, MAK., in Tokyo Bot. Mag. XIV. p. 184 (1900); MATSUM., Ind. Pl. Jap. II. 2. p. 137 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 77 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 369 (1931)

Syn. *Benzoin Thunbergii*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 204 (1846)

Lindera umbellata, (non THUNB.) BL., Mus. Bot. Lugd. Bat. I. p. 324 (1851);

MEISSN., in DC. Prodr. XV. 1. p. 245 (1864); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 197 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 415 (1875);

HEMSL., in Journ. Linn. Soc. XXXI. p. 393 (1891); SARGENT, in Gard. and For. VI. p. 292 (1893)

Lindera erythrocarpa, MAK., in Tokyo Bot. Mag. XI. p. (219) (1897), et XIII. p. 138 (1899); NAK., Fl. Kor. II. p. 178 (1911)

Benzoin erythrocarpum, REHD., in Journ. Arn. Arb. I. p. 144 (1920)

Nom. Jap. *Kanakuginoki*

Leg. Ipse, Jul. 31, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Korea.

Note. The species is found in the laurisilvae or in the lower part of the lauri-aciculisilvae.

The Lauraceous plants which are indigenous to the island suggest the theory that the island is closely related to the northern floral lands. But representatives of this family abound in southern lands like Formosa and South China, and make the chief representa-

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------------------|--------------|--------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Cinnamomum Camphora</i> , SIEB. | | + | + | + | + | + | + | + | + | + | + | |
| <i>Cinnamomum daphnoides</i> , SIEB. et ZUCC. . | | | | + | + | + | + | | | | | |
| <i>Cinnamomum japonicum</i> , SIEB. | | | + | + | + | + | + | + | + | + | | + |
| <i>Machilus japonica</i> , SIEB. et ZUCC. | | | | + | + | + | + | + | + | + | | |
| <i>Machilus Thunbergii</i> , SIEB. et ZUCC. | + | + | + | + | | | + | + | + | + | | + |
| <i>Actinodaphne lancifolia</i> , MEISSN. | | + | + | + | + | + | + | + | + | + | | + |
| <i>Actinodaphne longifolia</i> , NAK. | | | | + | + | | + | + | + | | | |
| <i>Neolitsea aciculata</i> , KOIDZ. | | | | | + | | + | + | + | | | |
| <i>Neolitsea sericea</i> , KOIDZ. | | | | + | + | + | + | + | + | + | | |
| <i>Litsea japonica</i> , MIRB. | | | | + | + | + | + | + | + | + | | |
| <i>Lindera citrata</i> , KOIDZ. | | | | + | + | + | + | | | | | |
| <i>Lindera Thunbergii</i> , MAK. | | | | | | | + | + | + | + | | |
| Total 12 | 1 | 4 | 10 | 11 | 8 | 12 | 10 | 10 | 8 | | | 4 |
| Percentage | 8 | 33 | 83 | 92 | 67 | 100 | 83 | 83 | 67 | | | 33 |
| (Southern elements 11) | | | | | | (Northern elements 12) | | | | | | |

tive of the laurisilvae. The plants are comparatively numerous in the island, a fact which shows that the island has some relationship with the southern regions.

Cassythaceae

Cassythaceae, LINDL., Introd. Nat. Syst. Bot. ed. 2. p. 202 (1835). et Veg. Kingd. ed. 3. p. 538 (1853)

Syn. *Laurinae-Cassytheae*, NEES ab ESENB., Laurin. Expos. p. 20 (1833); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 124 (1889)

Macleya, (*Macleaya*) R. BR., Obs. DENH. et CLAPP.

- App. p. 218 (1826); ENDL., Gen. Pl. n. 4817 (1836-40); PRANT. u. KÜNDIG. in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 140 (1889); FEDDE, in ENGL. Pfl.-reich. IV. 104. (Heft. 40) p. 215 (1909); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 230 (1932)
Syn. *Bocconia*, [LINN., Gen. Pl. ed. 1. p. 32 (1737)] et Sp. Pl. ed. 1. p. 505 (1753); DC., Prodr. I. p. 121 (1824); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 53 (1862) p.p.
Macleya, REICHB., Consp. p. 187 (1828)
Macleaya, BERNH., in Linn. VIII. p. 460 (1833)
Mackleya, WALP., Rep. I. p. 109 (1842)

- Macleya cordata**, R. BR. Obs. DENH. et CLAPP. APP. p. 218 (1826); FR. et SAV., Enum. Pl. Jap. I. p. 27 (1875); ITO et MATSUM., Tent. Fl. Lutch. p. 293 (1899); FEDDE, in ENGL. Pfl.-reich. IV. 104 (Heft 40) p. 216 f. 27 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 146 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 78 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 384 (1931)
Syn. *Bocconia cordata*, WILLD., Sp. II. p. 841 (1799); DC., Prodr. I. p. 121 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 11 (1867); PRANT. u. KÜNDIG. in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 140 f. 89 (1889)
Nom. Jap. *Takenigusa*
Leg. Ipse, Jul. 12, 1928.
Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan.
Note. The species is found in waste lands near the sea level.

Corydalis, VENT., Choix. p. 19 (1803); LAM. et

- DC., Fl. Franc. ed. 3. IV. p. 636 (1805); DC., Prodr. I. p. 126 (1824); ENDL., Gen. Pl. n. 4839 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 55 (1862); PRANT. u. KÜNDIG. in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 144 (1889); LEMÉE, Dict. Gen. Pl. Phan. II. p. 320 (1930)
Syn. *Capnoides*, [MOHRING, Hort. Priv. p. 22 (1736)] ADANS., Fam. II. p. 431 (1763)
Split, KRAMER, Tent. Bot. p. 55 (1744)
Cisticapnos, ADANS., Fam. II. p. 431 (1763)
Capnocystis, JUSS., in Ann. Mus. Paris. XVIII. p. 473 (1811)
Capnodes, O. KUNTZE, Rev. Gen. I. p. 13 (1891)
Corydalis incisa, PERS., Syn. II. p. 269 (1807); DC., Prodr. I. p. 127 (1824); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 173 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 12 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 274 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 37 (1886); MATSUM., Ind. Pl. Jap. II. 2. p. 143 (1912); MORI, Enum. Pl. Cor. p. 168 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 78 (1929); SUZUK., in Ann. Rep. Taihok. Bot. Gard. I. p. 145 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 379 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 343 (1931)
Syn. *Fumaria incisa*, THUNB., in Nov. Act. Petrop. XII. p. 104 t. D (1801)
Nom. Jap. *Murasaki-kikeman*
Leg. Ipse, Issô, Mart. 22, 1923.
Distr. Yezo, Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, Korea.
Note. The species is found under the Bamboo Association or in cultivated fields, near the sea level.

- Corydalis platycarpa**, (MAX.) MAK., in Tokyo Bot. Mag. XXIII. p. 16 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 78 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 381 (1931)

Syn. *Corydalis pallida*, PERS. var. *platycarpa*, MAX., ex PALIBIN, Consp. Fl. Kor. I. p. 24 (1898); NAK., Fl. Cor. I. p. 48 (1909); MATSUM., Ind. Pl. II. 2. p. 144 (1912)

Corydalis pallida, (non PERS.) MAXIM., in Bull. Soc. Nat. Mosc. p. 4 (1879) p.p.

Nom. Jap. *Kikeman*

Leg. Kusugawa, Mart. 2, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea.

Note. The species is found on somewhat humus ground in waste lands or by the roadside near the sea level.

Corydalis Tashiroi, MAK., in Tokyo Bot. Mag. XXIII. p. 65 1909; MASAMUNE, Prel. Rep. Veg. Yak. p. 78 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 382 (1931)

Nom. Jap. *Sima-kikeman*

Leg. Ipse, Onoaida, Mart. 2, 1927.

Distr. Kyûsyû, Amami-Ôsima, Okinawa.

Note. The species is found near the seashore, and ranges from Kyûsyû to Yaeyama, the most southern island of the Ryûkyû archipelago.

| Names of Plants | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------------------------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Kyûsyû | | | |
| | | | | | | | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû |
| | | | | | | | | | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | Saghalien | Northern Kuriles & Kantchatka |
| | | | | | | | | | Manchuria, Amur & Ussuri | China |
| <i>Macleya cordata</i> , R. BR. | | + | + | + | | | + | + | + | + |
| <i>Corydalis incisa</i> , PERS. | | + | + | + | | | + | + | + | + |
| <i>Corydalis platycarpa</i> , MAK. | | | | + | + | | + | + | + | |
| <i>Corydalis Tashiroi</i> , MAK. | | | | + | + | | + | | | |

As shown in the above table, this island has a closer relationship with the northern regions than with the southern ones, and has less close one to the flora of Formosa, in respect of this family.

Capparidaceae

Capparidaceae, LINDL., Nat. Syst. ed. 2. p. 61 (1836); PAX., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 209 (1891)

Nasturtium, [LINN., Syst. ed. 1 (1735),] R. BR., in AITON, Hort. Kew ed. 2. IV. p. 109 (1812); DC., Prodr. I. p. 137 (1824); ENDL., Gen. Pl. n. 4932 d. (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 68 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 184 (1890); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 652 (1932)

Syn. *Brachiolobos*, ALL., Fl. Pedem. I. p. 278 (1785)

Radicula, (DILL.) ex MOENCH, Meth. p. 262 (1794)

Baeumerta, GAERTN.; MEY. et SCHERB., Fl. Wetteran. II. pp. 419, 467 (1800)

Clandestinaria, SPACH, Hist. Nat. Veg. Phanér. VI. p. 427 (1838)

Nasturtium sublyratum, FR. et SAV., Enum. Pl. Jap. II. p. 281 (1876); MASAMUNE, Prel. Rep. Veg. Yak. p. 79 (1929); YAMAZUTA, List Manch. Pl. p. 134 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 405 (1931)

Syn. *Nasturtium montanum*, (non WALL.) MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 71 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 32 (1875) partim; ITO et MATSUM., Tent. Fl. Lutch. p. 297 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 22 (1906); NAK., Fl. Kor. I. p. 50 (1909)

Nasturtium montanum, WALL. var. *nipponica*, FR. et SAV., Enum. Pl. Jap. I. p. 32 (1875)

Nasturtium indicum, non DC.) MATSUM., Ind. Pl. Jap. II. 2. p. 158 (1912)

Nom. Jap. *Inugarasi*

Leg. Ipse, Aug. 12, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria.

Note. The species flourishes in wet places in cultivated or waste lands. It is a common species in the Far East.

Cardamine, [TOURN., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 176 (1735)] et Sp. Pl. ed. 1. p. 654 (1753); DC., Prodr. I. p. 149 (1824); ENDL., Gen. Pl. n. 4859 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 70 (1862); PRANT., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 184 (1890); LEMÉE, Dict. Gen. Pl. Phan. I. p. 828 (1929)*

Syn. *Kardanoglyphos*, SCHLECHTD., in Linn. XXVIII. p. 472 (1856)

Sibara, GREENE, in Pittonia. III. p. 10 (1896)

Cardamine Regaliana, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 73 (1865); MAXIM., in Mém. Biolog. IX. p. 8 (1872) pro. syn.; KUDO, Fl. Isl. Param. p. 112 (1922); MERR., Enum. Philipp. Pl. II. p. 208 (1923); HULT., Fl. Kamtch. II. p. 155 (1928)

Syn. *Cardamine flexuosa*, WITH., Bot. Arr. Brit. Pl. ed. 3. III. p. 578 (1796); MATSUM., in Tokyo Bot. Mag. XIII. p. 73 (1899); KOM., Fl. Mansh. II. p. 369 (1904); MAK. et NEM., Fl. Jap. ed. 2. p. 396 (1931)

Cardamine hirsuta, (non LINN.) HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 112 (1832); BENTH., Fl. Hongk. p. 16 (1861); MAXIM., in Mém. Biolog. IX. p. 6 (1873); FR., Pl. David. I. p. 34 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 43 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 297 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 23 (1906); NAK., Fl. Kor. I. p. 56 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 78 (1929)

Cardamine hirsuta, LINN. Subsp. *flexuosa*, FORB. et HEMSL., Ind. Fl. Sin. I. p. 42 (1886); MAK., in Tokyo Bot. Mag. XIII. p. (112) (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 152 (1912) p.p.

Cardamine flexuosa, WITH. subsp. *Regaliana*, SCHULZ, Monogr. Card. in Engl. Bot. Jahrb. XXXII. p. 476 (1903)

| Names of Plants | Regions | | | | | | | | | | |
|--|---------|-------------|--------|--------|---------|--------------|---------|------------|--------|-------|-------------------------------|
| | | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū | Prop. | Sikoku |
| | | | | | | | | | | | Honsyū |
| | | | | | | | | | | | Korea |
| | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | Manchuria, Amur & Usuri |
| | | | | | | | | | | | China |
| <i>Nasturtium sublyratum</i> , FR. et SAV. | | | + | | + | + | + | + | + | + | + |
| <i>Cardamine Regeliana</i> , MIQ. | + | | + | | + | + | + | + | + | + | + |
| <i> Capsella Bursa-pastoris</i> , MEDIC. | | | + | | + | + | + | + | + | + | + |

Capsella Bursa-pastoris, MOENCH. var. *auriculata*, MAK., in Journ. Jap. Bot. II. 5. p. 17 (1921); MAK. et NEM., Fl. Jap. ed. 2. p. 395 (1931)

Nom. Jap. *Nazuna*

Leg. Ipse, April. 1, 1927.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China.

Note. This is one of the pandemic species that are found in both hemispheres and in the island it occurs in cultivated or open lands, or near the roadside.

All the representatives of this family in this island are rather pandemic species and do not contribute to the determination of the phytogeographical position of the island.

Droseraceae

Droseraceae, DC., Théor. Elém. p. 214, et Prodr. I. p. 317 1824; DIELS, in ENGL. Pfl.-reich. IV. 11. Heft. 25 p. 1 1906

Syn. *Droserae*, SALISB., Parad. Lond. sub. t. 95 1808 partim.

Drosera, [LINN., Syst. ed. 1 1735] et Sp. Pl. ed.

1. p. 281 1753; DC., Prodr. I. p. 317 (1824; ENDL., Gen. Pl. n. 5033 1839; BENTH. et HOOK. f., Gen. Pl. I. 2. p. 662 1865; DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. p. 270 1891; DIELS, in ENGL. Pfl.-reich. IV. 11. Heft 26. p. 61 1905; LEMÉE, Dict. Gen. Pl. Phan. II. p. 744 1930

Syn. *Rossolia*, ADANS., Fam. II. p. 245 1763

Drosera rotundifolia, LINN., Sp. Pl. ed. 1. p. 281 (1753; SMITH, Fl. Brit. IV. p. 346 1804; DC., Fl. Franc. IV. p. 729 1815, et Prodr. I. p. 318 (1824; ROEM. et SCHULT., in Syst. Veg. VI. p. 760 1820; HOOK., Brit. Fl. p. 148 (1830; REICHB., Ic. Germ. f. 4522 1839; LEDEB., Fl. Ross. I. p. 261 1842); TRUTV. et MEY., Fl. Ochot. Phaen. p. 19 1856; MAXIM., Prim. Fl. Amur. p. 51 (1859; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 204 1867); FR. et SAV., Enum. Pl. Jap. I. p. 162 1875; BRITT. et BR., III., N. U. S. II. p. 161 (1897; MAK., in Tokyo Bot. Mag. XIV. p. 134 1900; KOM., Fl. Mansh. II. p. 389 (1904); DIELS, in ENGL. Pfl.-reich., IV. (Heft 26) p. 93, f. 32 (1906; KOIDZ., Pl. Sach. Nak. p. 73 1910; MATSUM., Ind. Pl. Jap. II. 2. p. 164 (1912); TAKEDA, in Journ. Linn. Soc. London Bot. XLII. p. 465 (1914; MIY. et MIYAKE, Fl. Saghal. p. 169 (1915); MORI, Enum. Pl. Cor. p. 177 (1922; KUDO, Fl. Isl. Param. p. 115 (1922), Contrib. Fl. North Saghal. p. 39 (1923), et Kita Karahuto Syokubutu Tyôshasho, p. 150 (1924; MAK. et NEM., Fl. Jap. p. 880 (1925), et ed. 2. p. 413 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 79 (1929), et in Journ. Soc. Trop. Agr. II. p. 30 (1930); HULT., Fl. Kamtch. III. p. 4 (1929)

Nom. Jap. *Môsengoke*

Leg. Ipse, Ambô, Jun. 20, 1928.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, Kamtchatka.

Note. The species is found in wet places from about 100 m up to 1900 m above the sea level, and is not yet reported in lands further south than this island.

Drosera spathulata, LABILL., Nov. Holl. Pl. Sp. I. p. 79, t. 106, f. 1 (1804); ROEM. et SCHULT., Syst. Veg. VI. p. 762 (1820); DC., Prodr. I. p. 318 (1824); Bot. Mag. t. 5240 (1861); BENTH., Fl. Austral. II. p. 459 (1864); MAK., in Tokyo Bot. Mag. XIX. p. 19 (1905); DIELS, in ENGL. Pfl.-reich. IV. 112 (Heft. 26) p. 83 (1906); MERR., Enum. Philipp. Pl. II. p. 216 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 79 (1929)

Syn. *Drosera Loureiri*, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 167, t. 31 (1833); BENTH., Fl. Hongk. p. 130 (1861); FORB. et HEMS., Ind. Fl. Sin. I. p. 289 (1887); MATSUM. et HAY., Enum. Pl. Formos. p. 136 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 164 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 413 (1931)

Drosera Burmanni, DC., Prodr. I. p. 318 (1824); ITO et MATSUM., Tent. Fl. Lutch. I. p. 469 (1899)

Nom. Jap. *Komósengoke*

Leg. Ipse, Onoaida, Jul. 26, 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines.

Note. This species is found in sunny but somewhat wet spots near the sea level on laterait-like ground.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|-------|-------------------------|-----------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien |
| <i>Drosera rotundifolia</i> , LINN. | | | | | | | + | + | + | + | + | + |
| <i>Drosera spathulata</i> , LABILL. | + | + | + | + | + | + | + | + | + | | | + |

Drosera rotundifolia has its southern limit of habitat in this island and from this point of view the flora of Yakusima has a closer relation with the northern regions than with the southern ones, in respect of this family.

Podostemonaceae

Podostemonaceae, RICH., in HUMBOLDT, BONPLAND et KUNTH, Nov. Gen. et Sp. I. p. 246 (1815)

Syn. *Podostemaceae*, TUL., in Ann. Sc. Nat. 3 sér. XL p. 88 (1849, et in Archiv. Mus. Paris. VI. p. 41 (1852).

Hydrobryum, ENDL., Gen. Pl. p. 1375 n. 1831 (1841); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 112 (1880); WARMING, in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. a. p. 20 (1890); ENGL., in id. 2-auf. B. 18a. p. 52 (1930); LEMÉE, Dict. Gen. Pl. Phan. III. p. 686 (1931)

Hydrobryum, sp. MASAMUNE, Prel. Rep. Veg. Yak. p. 79 (1929

Nom. Jap. Yakusima-kawagoromo

Leg. Ipse, Issô, Sept. 1, 1932.

Distr. Endemica?

Note. The species is found on the surface of rocks which are submerged under running water of the River Isso, in the place where the river enters from the mountain region into the plain.

| Name of Plant | Regions |
|-------------------------|-------------------------------|
| Hydrobryum, sp. | Philippines |
| | Bonins |
| | Taiwan |
| | Okinawa |
| | Amami Ōshima |
| | Tanegasima |
| | Kyūsyū Prop. |
| | Sikoku |
| | Honsyū |
| | Korea |
| | Yezo & Southern Kuriles |
| | Saghalien |
| | Northern Kuriles & Kamtchatka |
| | Manchuria, Amur & Ussuri |
| | China |

Hydrobryum in Japan is found in South Kyûsyû, and is not yet found in other parts of Japan, China, and in the Philippines. And from this point of view the island has many resemblances with the flora of Kyûsyû taking the distribution of *Podostemonaceae* into consideration, but the genus is found in Assam, Sikkim, and Burma. From this fact the island would appear to have some relation to these districts in respect of this family.

Crassulaceae

Crassulaceae, DC., in Bull. Soc. Philom. n. 49 (1801), et in LAM. et DC. Fl. Fr. ed. 3.
IV, p. 382 (1805)

Sedum, [TOURN., ex LINN. Syst. ed. 1 (1735)]
et Sp. Pl. ed. 1 p. 430 (1753); DC., Prodr. III. p. 401 (1828; ENDL., Gen. Pl. n.

| Names of Plants | Regions | |
|-----------------|-------------------------------|---------|
| | Philippines | |
| | Bonins | |
| | Taiwan | |
| | Okinawa | Ryūkyūs |
| | Amami-Ōshima | |
| | Tanegasima | Kyūsyū |
| | Kyūsyū Prop. | |
| | Sikoku | |
| | Honsyū | |
| | Korea | |
| | Yezo & Southern Kuriles | |
| | Saghalien | |
| | Northern Kuriles & Kamtchatka | |
| | Manchuria, Amur & Usuri | |
| | China | |

467 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 170 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 79 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 422 (1931)

Nom. Jap. *Kogome-mamengusa*

Leg. Ipse, Aug. 4, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. This interesting species is found in abundance in the littoral region.

Taking into consideration the distribution of the species of *Classuraceae* the island is intimately related to Kyûsyû and Amami-Ôsima, and little to Formosa.

Parnassiaceae

Parnassiaceae, ut *Parnassieae*) E. F. GRAY, Nat. Arr. Brit. Pl. p. 623 (1821)

Syn. *Saxifragaceae*, Subf. *Parnassioideae*, ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 178 (1930)

Parnassia, [TOURN., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 87 (1737),] et Sp. Pl. ed. 1. p. 273 (1753; DC., Prodr. I. p. 320 (1824); ENDL., Gen. Pl. n. 5039 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 639 (1865); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. a. p. 66 (1890), et in 2-auf. B. 18a. p. 178 (1930)]

Parnassia palustris, var. *multisetata*, LEDEB., Fl. Ross. I. p. 263 (1842; NAK., in Tokyo Bot. Mag. XL. p. 469 (1926); MAK. et NEM., Fl. Jap. ed. 2. p. 442 (1931)

Syn. *Parnassia mucronata*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 169 (1845)

Parnassia palustris, non LINN. MAXIM., Prim. Fl. Amur. p. 469 (1859; FR. et SAV., Enum. Pl. Jap. I. p. 149 (1875; FORB. et HEMSL., Ind. Fl. Sin. I. p. 272 (1887; FR., in Bull. Soc. Bot. Fr. p. 257 (1897; BOISS., in Bull. Herb. Boiss. V. p. 689 (1897; KOM., Fl. Mansh. II. p. 426 (1904); HAY., in Tokyo Bot. Mag. XX. p. 19 (1906; NAK., Fl. Kor. I. p. 220 (1909; MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929; HULT., Fl. Kamtch. III. p. 35 (1929)

form. *minima*, MASAMUNE. f. nov.

Herbae ca. 25 cm altae.

Nom. Jap. *Hime-umebati-sô*

Leg. Ipse, Aug. 31, 1926.

Distr. (Sp.) Saghalien, Kamtchatka, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria, China.

Note. The plant grows at altitudes from 600 m up to 1700 m in wet places like "*Hananogo*." The form is restricted to this island, but the type species is widely distributed in Japan.

Parnassia is a widely distributed element in the northern part of the north hemisphere, and one representative of this family is found in this island. This fact shows that the island has some relation to the northern regions.

| Name of Plant | Regions |
|--|-------------------------------|
| | Philippines |
| | Bonins |
| | Taiwan |
| | Okinawa |
| | Ryūkyūs |
| | Amami-Ōshima |
| | Tanegasima |
| | Kyūsū Prop. |
| | Sikoku |
| | Honsyū |
| | Korea |
| | Yezo & Southern Kuriles |
| | Saghalien |
| | Northern Kuriles & Kamtchatka |
| | Manchuria, Amur & Ussuri |
| | China |
| Parnassia palustris, var. multisetæ, LEDEB. f. minima, MASAMUNE | (sp.) + |

I. p. 251 (1719; LINN., Gen. Pl. ed. 1. p. 131. n. 378 (1737,) et Sp. Pl. ed. 1. p.

398 (1753), et Fl. Suec. ed. 2. p. 141 (1755); DC. et SERING., in DC. Prodr. IV. p. 17 (1830); ENDL., Gen. Pl. n. 4634 (1839); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 635 (1865); ENGL., in Linnaea XXXV. p. 1. (1867), Monographie Gatt. Saxif. (1872), in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. a. p. 52 (1890), et 2-auf. B. 18a p. 122 (1930); ENGL. u. IRMSCHER, in ENGL. Pfl.-reich. IV. 117, 1. p. 1 (1916)

Syn. Hydatica, NECK., Elem. II. p. 387 (1790)

Sekiha, MEDIK., in Staatsw. Vorles. Churpf. Phys. Ok. Gess. I. p. 209 (1791)

Tridactylites, HAW., Enum. Sax. p. 21 (1821)

Saxifraga mutabilis, KOIDZ., Sym. Or. p. 6 (1930)

Syn. Saxifraga cortusaeifolia, (non SIEB. et ZUCC.) ENGL., Monogr. p. 155 (1872); FR. et SAV., Enum. Pl. Jap. I. p. 145 (1875); HANCE, in Journ. Bot. XX. p. 261 (1882); YABE, Iconogr. Fl. Jap. I. tt. 3-6 (1891) (var. et form.); BOISS., in Bull. Herb. Boiss. V. p. 685 (1897); KOM., Fl. Mansh. II. p. 412 (1904); NAK., Fl. Kor. I. p. 219 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 188 (1912); ENGL. u. IRMSCH., in ENGL. Pfl.-reich. IV. 117. 2 (Heft 69 p. 648 (1919

Saxifraga cortusaeifolia, SIEB. et ZUCC. var. *typica*, MAK. in Tokyo Bot. Mag. XV. p. 12 (1901); ENGL. u. IRMSCH., in ENGL. Pfl.-reich. IV. 117. 2 Heft 69 p. 648 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 447 1931

Nom. Jap. Daimonzió

Leg. Ipse, Jul. 25, 1927.

Distr. Kuriles, Yezo, Honsyú, Sikoku, Kyúsyú, Korea, Manchuria, China.

Note. I have found this species in wet ground about 800 m above the sea level.

var. *obtusocuneata*, (MAK.) comb. nov.

Syn. Saxifraga cortusaeifolia, var. *obtusocuneata*, MAK., in Tokyo Bot. Mag. XV. p. 12 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 188 1912; ENGL. u. IRMSCH., in ENGL. Pfl.-reich. IV. 117 2, (Heft 69 p. 649 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 447 (1931

Nom. Jap. Utiwa-daimonzi-só

Leg. Ipse, Miyanoura, Aug. 23, 1928.

Distr. Honsyú, Sikoku, Kyúsyú.

Note. The plant is found in wet grounds from 800 m up to about 1800 m above the sea level.

Mitella, [TOURN., ex LINN. Syst. ed. 1 (1735)

et Sp. Pl. ed. 1. p. 406 (1753); DC. et SERING., in DC. Prodr. IV. p. 49 (1830); ENDL., Gen. Pl. n. 4641 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 638 (1865); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. a. p. 63 (1890), et 2-auf. B. 18a p. 160 (1930); LEMÉE., Dict. Gen. Pl. Phan. IV. p. 499 (1932).

Syn. Mitellopsis, MEISSN., Gen. p. 136 (1838

Mitella Doiana, OHWI, in Act. Phytotax. Geogr. I. p. 302 (1932)

Syn. Mitella kiusuana, (non MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929

Nom. Jap. Himetyarumerusó

Leg. Ipse, Kosugidani, Jun. 15, 1928.

Distr. Endemica.

Note. The species is an endemic one in this island, and is found as undergrowth in the lauri-aciculisilvae.

Hydrangea, [GRONOV., ex COROLL. Gen. p. 7

(1737)]; LINN., Sp. Pl. ed. 1. p. 397 (1753); DC. et SERING., in DC. Prodr. IV. p.

13 (1830); ENDL., Gen. Pl. n. 4668 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 640 (1865); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. a. p. 74 (1890) et 2-auf. B. 18a. p. 202 (1930); LEMÉE, Dict. Gen. Pl. Phan. III. p. 683 (1931)

Syn. *Hydrangia*, LINN., Gen. Pl. ed. 6. p. 222 (1764)

Hortensia, COMM., ex JUSS., Gen. Pl. p. 214 (1789)

Hydrangea chinensis, MAX., Hydr. As. Or. p. 7 (1867); HANCE, in Journ. Bot. VII. p. 11 (1878); FORB. et HEMSL., Ind. Fl. Sin. I. p. 273 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 461 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 131 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 178 (1912); CHUN., Cat. Tree. and Shrub. Chin. p. 67 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 203 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 434 (1931)

Nom. Jap. *Simakonterigi*

Leg. Ipse, Jun. 6, 1928.

Distr. Okinawa, Taiwan, China.

Note. The species is found in the lauri-aciculisilvae and in the laurisilvae, and it is not yet found in lands further north than this island.

Hydrangea grosserata, ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 204 (1930)

Nom. Jap. *Yakusima-konterigi*

Leg. Ipse, Kosugidani, Jun. 6, 1928.

Distr. Endemica.

Note. The species is found in the laurisilvae from the sea level up to about 600 m.

Hydrangea paniculata, SIEB., in Nov. Act. Nat. Cur. XIV. ii. p. 631 (1829); SIEB. et ZUCC., Fl. Jap. I. p. 115, t. 61 (1839), et Fl. Jap. Fam. Nat. I. p. 192 (1845); MAXIM., Hydr. As. Or. p. 9 (1867); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 98 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 150 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 274 (1887); CHUN., Cat. Tree. and Shrub. Chin. p. 68 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 204 (1930); SUZUKI, in Ann. Rep. Taihok. Bot. Gard. I. p. 146 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 433 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 443 (1931)

Nom. Jap. *Noriutugi*

Leg. Ipse, Aug. 1, 1924.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, China.

Note. The species is found as an epiphyte or as a terrestrial plant from 400 m up to 1000 m above the sea level.

Hydrangea petiolaris, SIEB. et ZUCC. var. *cordifolia*, MAXIM., Hydr. As. Or. p. 16 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 153 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 181 (1912); MORI, Enum. Pl. Cor. p. 183 (1922); CHUN., Cat. Tree. and Shrub. Chin. p. 68 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 205 (1930)

Syn. *Hydrangea cordifolia*, SIEB. et ZUCC., Fl. Jap. I. p. 113, t. 59 f. 2 (1839); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 98 (1867)

Hydrangea scandens, (non LINN.) MAX., Hydr. p. 16 (1867); MAK., et NEM., Fl. Jap. ed. 2. p. 439 (1931)

Nom. Jap. *Gotôzuru*

Leg. Ipse, Kuriodake, Aug. 18, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. The species is found from 500 m up to 1900 m above the level of the sea.

Hydrangea scandens, SERINGE, in DC. Prodr. IV. p. 15 (1830¹); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 98 (1867); KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 3 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929¹); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 203 (1930)

Syn. *Viburnum scandens*, LINN. f., Supp. Pl. p. 184 (1781); WILLD., Sp. Pl. I. p. 1487 (1797)

Viburnum virens, THUNB., Fl. Jap. p. 123 (1784)

Hydrangea virens, SIEB., Synop. Hydr. Gen. Sp. Jap. in Nov. Act. Nat. Cur. Leopold. Carol. XIV. 2. p. 689 1829¹; SIEB. et ZUCC., Fl. Jap. I. p. 114, t. 60 1839¹; MAXIM., Rev. Hydr. As. Or. p. 6 1867; FR. et SAV., Enum. Pl. Jap. I. p. 149 (1875); ITO et MATSUM., Tent. Fl. Lutch. I. p. 193 (1899¹); MATSUM., Ind. Pl. Jap. II. 2. p. 182 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 439 (1931)

Nom. Jap. *Gaku-utugi*

Leg. Ipse, Aikodake, Jul. 28, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa.

Note. The species is found in the laurisilvae or in the lauri-aciculisilvae, from 200 m up to 1500 m.

var. yakusimensis, MASAMUNE, var. nov.

Sufrutex glabriusculus ramosus. Folia opposita ovata vel obovata chartacea, apice acuminata vel caudato-acuminata basi cuneata, margine grosse serrulata utrimque glabra petiolata, 2. 5-5.5 cm longa 1-2 cm lata, petiolata, petiolis 2.5-5.5 cm longis.

Nom. Jap. *Yakusima-gaku-utugi*

Leg. Ipse, Jun. 9, 1928.

Distr. Endemica.

Note. The variety is different from the type in its caudate leaves. It is found as undergrowth in the laurisilvae or in the lauri-aciculisilvae from 100 m up to 800 m above the sea level.

Schizophragma, SIEB. et ZUCC., Fl. Jap. I. p. 58, t. 26 (1837¹); ENDL., Gen. Pl. n. 4670 (1836-40¹); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 641 (1865¹); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. ii. a. p. 76 (1890¹), 2-auf. B. 18a. p. 207 (1930)

Schizophragma hydrangeoides, SIEB. et ZUCC., Fl. Jap. I. p. 60. t. 26 (1837¹), et Fl. Jap. Fam. Nat. I. p. 192 (1845¹); MAXIM., Rev. Hydr. As. Or. p. 18 (1867¹); FR. et SAV. Enum. Pl. Jap. I. p. 154 (1875¹); BOISS., in Bull. Herb. Boiss. V. p. 692 (1897¹); NAK., Fl. Kor. II. p. 486 (1911¹); MATSUM., Ind. Pl. Jap. II. 2. p. 191 (1912¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 80 (1929¹); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 18a. p. 207 (1930¹); MAK. et NEM., Fl. Jap. ed. 2. p. 450 (1931¹)

Nom. Jap. *Iwagarami*

Leg. A. KIMURA! Aug. 7, 1922.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea.

Note. The species is found in the laurisilvae and in the lauri-aciculisilvae, and it is not yet found in lands further south than this island.

| Names of Plants | Regions | | | | | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|-----------------------|------------|--------------|--------|--------|--------|-------|-------------------------|-----------|------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Ussuri | China |
| <i>Astilbe glaberrima</i> , NAK. | | | | | | | | | | | | | | | | | |
| 1. <i>saxatilis</i> , NAK. | | | | | | | | | | | | | | | | | |
| <i>A. g. l. terrestris</i> , NAK. | | | | | | | | | | | | | | | | | |
| <i>Saxifraga mutabilis</i> , KOIDZ. | | | | | | | | | + | + | + | + | + | | | + | + |
| <i>S. m. var. obtuso-cuneata</i> , MAK. | | | | | | | | | + | + | + | | | | | | |
| <i>Mitella Doiana</i> , OHWI | | | | | | | | | | | | | | | | | |
| <i>Hydrangea chinensis</i> . MAXIM. | | | + | + | | | | | | | | | | | | + | |
| <i>Hydrangea grosserata</i> , ENGL. | | | | | | | | | | | | | | | | | |
| <i>Hydrangea paniculata</i> , SIEB. | | | + | | | | | | + | + | + | | + | + | | + | |
| <i>Hydrangea petiolaris</i> , SIEB. et ZUCC. ¹ var. <i>cordifolia</i> , MAXIM. | | | | | | | | | + | + | + | + | + | + | | + | |
| <i>Hydrangea scandens</i> , SERINGE | | | | + | + | | | | + | + | + | | | | | | |
| <i>H. s. var. yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | | | |
| <i>Schizophragma hydrangeoides</i> , SIEB. et ZUCC. | | | | | | | | | + | + | + | + | + | + | | | |
| Total | 12 | 2 | 2 | 1 | 1 | 6 | 6 | 6 | 3 | 4 | 2 | | | | 1 | 4 | |
| Percentage | | 17 | 17 | 8 | 8 | 50 | 50 | 50 | 25 | 33 | 17 | | | | 8 | 33 | |
| (Southern elements 3) | | | | | | (Northern elements 6) | | | | | | | | | | | |

The species of *Astilbe* and *Mitella* which are indigenous to this island are endemic elements. So from this point of view the island has some independence in the matter of Saxifragaceous plants. It has also close relations with the northern lands for there are several northern elements which are not found in lands further south than this island.

Pittosporaceae

Pittosporaceae, LINDL., Veg. Kingd. p. 441 (1847)

Syn. Pittosporae, ENDL., Gen. Pl. p. 1081 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 130 (1862)

| | | Regions |
|---|-----------------|------------------------------|
| | Names of Plants | Philippine |
| | | Bonins Taiwan |
| | | Okinawa |
| | | Ryūkyūs |
| | | Amami-Oshima |
| | | Kyūshū Prop. |
| | | Tanegasima |
| | | Kyūsyū Prop. |
| | | Sikoku |
| | | Honsyū |
| | | Korea |
| | | Yezo & Southern Kuriles |
| | | Saghalien |
| | | Northern Kuriles & Kamchatka |
| | | Manchuria, Amur & Usuri |
| | | China |
| <i>Distylium racemosum</i> , SIEB. et ZUCC. . . . | + | |
| <i>D. r. var. angustifolium</i> , MASAMUNE . . . | + | |

Distylium, the only genus of this family indigenous to this island, is widely distributed in Indo-Malay and subtropical Eastern Asia. According to this the island would seem to be situated in the same geographical region as the above mentioned districts, but the further fact that the species is found in the island but not in Formosa and in South China, denotes that the island has a more or less close relation to northern lands.

Pomaceae

Pomaceae, JUSS., Gen. Pl. p. 334 (1789); LINDL., in Trans. Linn. Soc. XIII. p. 88 (1821), et Veg. Kingd. p. 559 (1853)

Syn. *Rosaceae*, subf. *Pomoideae*, FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 18 (1888)

Sorbus, [TOURN., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 477 (1753); WILLD., Sp. Pl. II. p. 1008 (1799); ROEM., Syn. Monogr. Rosa, p. 102 (1847); DECNE., Mem. Fam. Poma. p. 157 (1874); WENZIG., in Linnaea XXXVIII. p. 50 (1874)

Syn. *Pirus*, ENDL., Gen. Pl. n. 6342 (1836-40) p.p.; BENTH. et HOOK. f., Gen. Pl. I. 2. p. 626 (1865) partim.; FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 22 (1888) partim.

Sorbus japonica, KOEHNE, in Gaertenfl. L. p. 408 (1901), et in Mitteilungen Deutschen Dendr. Gessell. p. 57 (1906); KOIDZ., Consp. Ros. Jap. p. 48 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929)

Syn. *Pirus americana*, var. *micrantha*, C. KOCH, in MIQ. Ann. Mus. Bot. Lugd. Bat. I. p. 249 (1865)

Pirus americana, var. *microcarpa*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 41 (1867)

Sorbus aucuparia, LINN. var. *japonica*, MAXIM., in Mém. Biolog. IX. p. 170 (1873)

Pyrus aucuparia, var. *japonica*, MAXIM., ex FR. et SAV. Enum. Pl. Jap. I. p. 140 (1875)

Pyrus Matsumurana, MAK., in Tokyo Bot. Mag. XI. p. 71 (1897)

Sorbus commixta, HEDLUND, in Kgl. Vetensk. Ak. Handl. 35. p. 38 (1901); C. K. SCHN., in Bull. Herb. Boiss. 2. sér. IV. p. 314 (1904), et III. Handb. Laubh. I. p. 677 (1906); NAK., Fl. Kor. II. p. 473 (1911); YAMAZUTA, List Manch. Pl. p. 155 (1930)

Sorbus aucuparia, (non LINN.) MATSUM., Ind. Pl. Jap. II. 2. p. 241 (1912); KOM., Fl. Mansh. II. p. 472 (1904); MAK et NEM., Fl. Jap. ed. 2. p. 531 (1931)

Nom. Jap. *Nanakamado*

Leg. Ipse, Kosugidani, Sept. 3, 1926.

Distr. Southern Kuriles, Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. It is interesting to find this species as an epiphyte in this island, mostly in the lauri-aciculisilvae. It is not found in lands further south than this island.

Micromeles, DECNE., in Nouv. Archiv. Mus. Paris. X. p. 168 (1874); KOEHNE, Gatt. Pomaceen. p. 20 (1890); KOIDZ., Consp. Ros. Jap. p. 67 (1913)

Micromeles alnifolia, KOEHNE, in Gatt. Poma. (in Wissen. Beil. Progt. Falk-Realg. Berl. Ostern) p. 20 (1890); DIPPEL., Handl. Laubholzk. III. p. 381 f. 192 (1893); KOM., Fl. Mansh. II. p. 479 (1904); C. K. SCHN., Ill. Handb. Laubh. I. p. 703 (1906); NAK., Fl. Kor. I. p. 183 (1909), et II. p. 474 (1911); KOIDZ., Consp. Ros. Jap. p. 68 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 81 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 472 (1931)

Syn. *Crataegus alnifolia*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 130 (1846)

Pirus Miyabei, SARGENT, For. Fl. Jap. p. 40 (1849); SHIRAZAWA, Ic. For. Tree. Jap. ed 2. I. p. 144, t. 49 (1911)

Sorbus alnifolia, C. KOCH, in Ann. Mus. Bot. Lugd. Bat. I. p. 249 (1865); MAXIM., in Mém. Biolog. IX. p. 173 (1873); WENZIG., in Linnaea, XXXVII. p. 58 (1874)

Aria alnifolia, DECNE., Mem. Fam. Pomac. p. 166 (1874)

Aria tiliifolia, DECNE., Mem. Fam. Pomac. p. 166 (1874)

Pirus alnifolia, (non LINN.) FR. et SAV., Enum. Pl. Jap. II. p. 350 (1876)

Nom. Jap. *Azuki-nasi*

Leg. Ipse, Hitogodake, Jul. 7, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The species is found more or less rarely in the lauri-aciculilvae, from 600 m up to 1500 m above the sea level, and is not yet reported further south than Yakusima.

Raphiolepis, (*Rhaphiolepis*) LINDL., in Bot. Reg. t. 486 (1820), et in Trans. Linn. Soc. XIII. p. 105 (1821); DC., Prodr. II. p. 630 (1825); ENDL., Gen. Pl. n. 6352 (1836-40); ROEM., Syn. Monogr. III. p. 100 (1847); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 627 (1865); WENZIG., in Linnaea XXXVII. p. 100 (1874); DECNE., Mem. Fam. Poma. p. 132 (1874); BAILL., Nat. Hist. Pl. I. pp. 400, 464 (1876); FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 25 (1888); KOIDZ., Consp. Ros. Jap. p. 70 (1913)

Raphiolepis umbellata, MAK., in Tokyo Bot. Mag. XVI. p. 13 (1902); NAK., in Tokyo Bot. Mag. XXVI. p. 95 (1912); KOIDZ., Consp. Ros. Jap. p. 71 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 82 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 501 (1931)

Syn. *Laurus umbellata*, THUNB., Fl. Jap. p. 175 (1784)

Raphiolepis japonica, SIEB. et ZUCC., Fl. Jap. I. p. 162 t. 85 (1841), et Fl. Jap. Fam. Nat. I. p. 130 (1845); A. GRAY, in Perry Exp. Jap. p. 311 (1857); C. KOCH, in Ann. Mus. Bot. Lugd. Bat. I. p. 250 (1865); HOOK. f., in Bot. Mag. t. 5510 (1865); MAXIM., in Mém. Biolog. IX. p. 181 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 142 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 264 (1887); ITO, et MATSUM., Tent. Fl. Lutch. I. p. 191 (1899)

Mespilus Sieboldi, BL., in Walp. Rep. II. p. 54 (1843)

Opa japonica, SEEM., in Journ. Bot. p. 281 (1863)

Raphiolepis umbellata, C. K. SCHN., Ill. Handb. Laubh. I. p. 705 f. 390 h-i (1906), et in Fedd. Rep. Nov. Sp. Reg. Veg. III. p. 152 (1907)

Nom. Jap. *Syarinbai*

Leg. Ipse, Ambô.

Rubus rosaefolius, β *sorbifolius*, MAK., in Tokyo Bot. Mag. XV. p. 51 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 236 (1912)

Nom. Jap. *Koziki-itigo*

Leg. Ipse, April. 5, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China, Himalaya.

Note. The species is found in clearings as the first invader.

Rubus Buergeri, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 36 (1867); MAXIM., in Mél. Biolog. VIII. p. 378 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 123 (1875); O. KUNTZE, Meth. p. 64 (1897); FOCKE, in Engl. Bot. Jahrb. XXIX. p. 394 (1900); MATSUM., Ind. Pl. Jap. II. 2. p. 228 (1912); KOIDZ., Consp. Ros. Jap. p. 156 (1913); MORI, Enum. Pl. Cor. p. 204 (1922); CHUN., Cat. Tree. and Shrub. Chin. p. 88 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 82 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 510 (1931)

Syn. *Rubus moluccanus*, non LINN.) THUNB., Fl. Jap. p. 219 (1784)

Rubus Maximowiczii, O. KUNTZE, Meth. p. 64 (1897); MATSUM., Ind. Pl. Jap. II. 2. p. 233 (1912)

Nom. Jap. *Huyu-itigo*

Leg. Ipse, Aug. 10, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, China.

Note. The species is found as undergrowth in the laurisilvae and is rather common in the above cited regions, but it is not yet reported further south than this island.

Rubus Grayanus, MAXIM., in Mél. Biolog. VIII. p. 382 (1871); O. KUNTZE, Meth. p. 94 (1879); FORB. et HEMSL., Ind. Fl. Sin. I. p. 231 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 450 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 230 (1912); KOIDZ., Consp. Ros. Jap. p. 124 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 82 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 513 (1931)

Nom. Jap. *Ryûkyû-itigo*

Leg. Ipse, Miyanoura, Mart. 17, 1923.

Distr. Tanegasima, Amami-Ôsima, Okinawa.

Note. The species is found in open clearings as a pioneer from the sea level up to 700 m, and is restricted to the Ryûkyû archipelago.

Rubus nesioties, FOCKE, in Biol. Bot. 72, I. p. 43 (1910); KOIDZ., Consp. Ros. Jap. p. 162 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 518 (1931)

Syn. *Rubus abortivus*, (non O. KUNTZE) ITO et MATSUM., Tent. Fl. Lutch. I. p. 451 (1899)

Nom. Jap. *Kuwanoha-itigo*

Leg. Ipse, Kosugidani, Jul. 23, 1928.

Distr. Okinawa.

Note. The species is often found in the lauri-aciculisilvae and in the laurisilvae as an invader in the clearings. It is not yet reported in lands further north than Yakusima.

Rubus okinawensis, KOIDZ., Consp. Ros. Jap. p. 140 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 519 (1931)

Syn. *Rubus rosaefolius*, (non SM.) ITO et MATSUM., Tent. Fl. Lutch. p. 450 (1899)

Nom. Jap. *Ryûkyû-yabu-itigo*

Leg. A. KIMURA! Aug. 7. 1922.

Distr. Okinawa, Amami-Ōsima.

Note. The species is found in waste lands or in clearings. It is not yet found in lands further north than this island.

Rubus palmatus, THUNB., Fl. Jap. p. 217 (1784), et Ic. Pl. Jap. Dec. IV. t. 6 (1802); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 126 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 35 (1867); MAXIM., in Mél. Biolog. VIII. p. 384 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 126 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 234 (1887); PALIB., Consp. Fl. Kor. I. p. 78 (1898); Bot. Mag. t. 7801 (1901); C. K. SCHN., Ill. Handb. Laubh. I. p. 506 (1906); FOCKE, Monogr. Rub. p. 132 f. 56 (1910); MATSUM., Ind. Pl. Jap. II. 2. p. 234 (1912); KOIDZ., Consp. Ros. Jap. p. 118 (1913); CHUN., Cat. Tree. and Shrub. Chin. p. 91 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 519 (1931)

Syn. *Rubus microphyllus*, LINN. f., Supp. Syst. Veg. p. 263 (1781)

Rubus similis, O. KUNTZE, Meth. pp. 89, 94 (1879)

Nom. Jap. *Momizi-itigo*

Leg. Ipse, April. 5, 1927.

Distr. Honsyū, Sikoku, Kyūsyū, Korea, China.

Note. The species is found as a pioneer in clearings or in waste lands, and is not yet reported in lands further south than this island.

Rubus pectinellus, MAXIM., in Bull. Acad. Petersb. XVII. p. 147 (1871), et in Mél. Biolog. VIII. p. 374 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 122 (1875); O. KUNTZE, Meth. p. 79 (1897); MATSUM., in Tokyo Bot. Mag. XV. p. 155 (1901), et Ind. Pl. Jap. II. 2. p. 234 (1912); FOCKE, Monogr. Rub. p. 22 (1910); KOIDZ., Consp. Ros. Jap. p. 107 (1913); MERR., Enum. Philipp. Pl. II. p. 229 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 521 (1931)

Nom. Jap. *Maruba-huyātigo*

Leg. Ipse, Jul. 31, 1924.

Distr. Honsyū, Sikoku, Kyūsyū, Taiwan, Philippines, China.

Note. The species grows in the open from 700 m up to 1800 m above the sea level.

Rubus rosaefolius, SMITH, Pl. Ic. Hact. Ined. III. t. 60 (1791); WILLD., Sp. Pl. II. p. 1080 (1799); DC., Prodr. II. p. 556 (1825); HOOK. f., Fl. Brit. Ind. II. p. 431 (1878); FORB. et HEMSL., Ind. Fl. Sin. I. p. 237 (1887); Bot. Mag. t. 6970 (1887); SCHNID., Ill. Handb. Laubh. I. p. 513 (1906); MATSUM. et HAY., Enum. Pl. Formos. p. 123 (1906); FOCKE, Monogr. Rub. p. 153 (1911); DUNN et TUTCH., Fl. Kwang. and Hongk. p. 95 (1912); KOIDZ., Consp. Ros. Jap. p. 146 (1913); MERR., Enum. Philipp. Pl. II. p. 230 (1923); CHUN., Cat. Tree. and Shrub. Chin. p. 92 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929)

Syn. *Rubus commersoni*, POIR., Encycl. Meth. Bot. VI. p. 240 (1804); MAK., in Tokyo Bot. Mag. XXIII. p. 150 (excl. syn.) (1909)

Rubus jamaicensis, (non LINN.) BL., Fl. Filip. p. 427 (1837)

Rubus rosaefolius, var. *tropicus*, MAXIM., 1. *genuinus*, MAK., in Tokyo Bot. Mag. XV. p. 49 (1901); MAK. et NEM., Fl. Jap. ed. 2. p. 524 (1931)

Nom. Jap. *Ōbaraitigo*

Leg. A. KIMURA! Aug. 6, 1922.

Distr. Honsyū, Kyūsyū, Okinawa, Taiwan, China, Philippines.

Note. The species grows as the first invader in clearings of the laurisilvae and lauri-aciculisilvae.

var. *Maximowiczii*, FOCKE, Sp. Rub. Pars. I. p. 155 (1910; KOIDZ., Consp. Ros. Jap. p. 147 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 523 (1931)

Syn. Rubus rosaeifolium, β . *coronarius*, MAXIM., in Mél. Biolog. VIII. p. 388 (1871) p. m.

Nom. Jap. Ryūkyū-bara-itigo

Leg. Ipse, ca. Kosugidani

Distr. Amami-Ōsima.

Note. I found it by the roadside at an elevation of 600 m in the laurisilvae. The species is not yet found in lands further north than this island.

Rubus Sieboldii, BL., Bijdr. p. 1110 (1825); WALP., Rept. II. p. 20 (1843; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 35 (1867; MAXIM., in Mél. Biolog. VIII. p. 377 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 123 (1875; FORB. et HEMSL., Ind. Fl. Sin. I. p. 237 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 447 (1899); FOCKE, in Bibliot. Bot. Heft. 72. p. 110. ff. 49. et 50 (1910; MATSUM., in Tokyo Bot. Mag. XV. p. 156 (1901), et Ind. Pl. Jap. II. 2. p. 236 (1912; KOIDZ., Consp. Ros. Jap. p. 159 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 524 (1931)

Syn. Rubus bracteosa, A. GRAY.; O. KUNTZE, Meth. p. 54 (1879

Nom. Jap. Hōroku-itigo

Leg. Ipse, Kurio, Mart. 22, 1923.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, China.

Note. The plant grows in lowlands near the forest edges, and in waste lands. The inhabitants of the island say that the soil is productive wherever this plant grows. This information denotes that the plant is an indicator of the fertility of the soil.

Rubus triphyllus, THUNB., Fl. Jap. p. 215 (1784; FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 30 (1888, in Engl. Bot. Jahrb. XXIX. p. 397 (1900), et in Bibl. Bot. Heft. 72. 2. p. 187 (1911; KOM., Fl. Mansh. II. p. 484 (1904); C. K. SCHN., I. p. 513 (1906; Laubh. III. Handb. NAK., Fl. Kor. II. p. 475 (1911; MASTUM., Ind. Pl. Jap. II. 2. p. 238 (1912); KOIDZ., Consp. Ros. Jap. p. 137 (1913; CHUN., Cat. Tree. and Shrub. Chin. p. 93 (1924; MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929

Syn. Rubus purpureus, (non HOOK.), BUNGE, Enum. Pl. Chin. Bor. p. 98 (1832

Rubus parvifolius, (non LINN.) SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 126 (1845; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 34 (1867; MAXIM., in Mél. Biolog. VIII. p. 392 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 127 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 235 (1887; PALIB., Consp. Fl. Kor. I. p. 79 (1898; ITO et MATSUM., Tent. Fl. Lutch. I. p. 451 (1899); NAK., Fl. Kor. I. p. 188 (1909; MAK. et NEM., Fl. Jap. ed. 2. p. 520 (1931)

Nom. Jap. Nawasiro-itigo

Leg. Ipse, Ambō.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, Korea, Manchuria, China, Australia.

Note. The species grows in waste lands and by the roadside at low altitudes and is common in the Far East.

Rubus yakumontanus, MASAMUNE, Sp. nov.

Fruticosus glaber haud aculeatus. Ramus discursus torti vibratque. Folia

chartacea triangulari-ovata vel ovata 3-5 cm longa 2.5-3.5 cm lata apice triangulari-acuminata leviter cordata vel truncata, margine subduplicato-serrata, 3-5 lobata, lobo terminali elongato-triangulari-ovato 2.5-3.5 cm longo 1.5-2 cm lato apice acuminato ad summum acuminatissimo basi leviter contracto, lobis lateralibus oblique triangulari-ovatis, utraque glabra, sed ad nervos pilosa, petiolis 1-2 cm longis pilosis. Flores ad apicem ramulorum lateralium terminales solitarii, pedicellis 1-1.5 cm longis gracilibus subpendulis glabris. Calyx viridis; cupula dorso subplana vel leviter convexa 6 mm in diametro glabra; lobis calycis lanceolatis vel elongato-triangularibus apice acuminatis ca. 10 mm longis 3 mm latis utrimque glabris. Petala alba elliptica vel ovata ca. 10 mm longa 8 mm lata apice rotundata, basi rotundata ad extremitatem subito acuta, margine integra. Stamina numerosa, filamentis, glabris albis, antheris ovatis 1/2 mm longis. Carpella numerosa.

Nom. Jap. *Yakusima-kiitigo*

Leg. Ipse, Kosugidani, April. 5, 1927.

Distr. Endemica.

Note. I found this species in clearings or by the roadside. This is a light loving plant and one of the first invaders of the successive secondary area. The species is restricted to this island.

Rubus yakusimensis, MASAMUNE

Syn. *Rubus minusculus*, LÉVL. var. *yakusimensis*, MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929)

Frutex glaber ca. 10 cm altus spinosus. Folia chartaceo-membranacea spinifera, obovata in ambitu, pinnatim 5-7 foliolata, foliolis ellipticis vel ovato-ellipticis ca. 1-4 cm longis 0.5-1.5 cm latis, supra plus minusve pubescentibus, subtus glabris, margine inciso-serratis, apice acuminatis, basi rotundato-obtusis, petiolis gracilibus 3-4 cm longis glabris laxo spiniferis; stipulis lineari-lanceolatis, ca. 7 mm longis 1 mm latis. Flores terminales vel axillares, pedunculis glabris aculeatis, aculeis ca. 2 mm longis, recurvis. Cupula calicis 7 mm in diametro dorso subtus paucis setulosa glabra; lobis 5 patentibus, elongato-triangularibus apice longe caudatis cum caudis ca. 13 mm longis basi 4 mm latis margine tomentosis, utrimque glabriusculis. Petala 5, obovato-rotundata vel obovato-elliptica, apice rotundata vel emarginata, basi leviter attenuata ca. 11 mm longa 6 mm lata. Stamina numerosa. Carpella numerosa, stylis glabris.

Nom. Jap. *Yakusima-hime-bara-itigo*

Leg. Ipse, Jul. 9, 1927.

Note. The species is found from 600 m up to 1600 m above the sea level, often in clearings and by the roadside. This fact denotes that it is a light loving plant. It is restricted to the island.

Fragaria, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 494 (1753); DC., Prodr. II. p. 569 (1825); ENDL., Gen. Pl. n. 6361 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 620 (1865); BAILL., Nat. Hist. Pl. I. p. 453 (1876); FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 33 (1888); KOIDZ., Consp. Ros. Jap. p. 163 (1913); LEMÉE, Dict. Gen. Pl. Phan. III. p. 151 (1931)

Fragaria yakusimensis, MASAMUNE, in Journ. Trop. Agr. III. p. 115 (1931)

Nom. Jap. *Yakusima-sirobana-hebi-itigo*

Leg. Ipse, Jun. 1928.

Distr. Endemica.

Note. The species is found in the Pseudosasa Owatarii Association, about 1700 m above the sea level.

Potentilla, [LINN., Syst. ed. 1. (1735), et Gen. Pl. ed. 1. p. 147 (1737)] et Sp. Pl. ed. 1. p. 495 (1753); DC., Prodr. II. p. 571 (1825); ENDL., Gen. Pl. n. 6363 (1836-40); LEHMANN., C. Revis Pontentillarum (1856); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 620 (1865); FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 34 (1888); WALF., Monogr. Potent. in Bibl. Bot. Heft. 71 (1908); KOIDZ., Cons. Ros. Jap. p. 170 (1913)

Syn. *Comarum*, [LINN., Gen. Pl. ed. 1. p. 148 (1737)] et Sp. Pl. ed. 1. p. 502 (1753)
Tormentilla, LINN., Sp. Pl. ed. 1. p. 500 (1753)
Pancovia, (HEIST.) ex ADANS., Fam. II. p. 294 (1763)
Quinquefolium, (TOURN.) ex ADANS., Fam. II. p. 295 (1763)
Argentina, LAM., Fl. Fran. III. p. 118 (1778)

Potentilla chinensis, SER., in DC. Prodr. II. p. 581 (1825); MAXIM., Prim. Fl. Amur. p. 96 (1859); REGEL, Tent. Fl. Uss. p. 56 (1861); FR. et SAV., Enum. Pl. Jap. II. p. 338 (1876); FR., Pl. David. p. 112 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 241 (1887); KOM., Fl. Mansh. II. p. 501 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 125 (1906); WALF., Monogr. Potent. p. 179 (1908); NAK., Fl. Kor. I. p. 193 (1909), et II. p. 479 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 210 (1912); KOIDZ., Cons. Ros. Jap. p. 178 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 481 (1931)

Nom. Jap. *Kawara-saigo*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, Manchuria.

Note. The species is found by the roadside, on cultivated lands and lowlands, and is rather common throughout Japan.

Potentilla Dickinsonii, FR. et SAV., Enum. Pl. Jap. II. p. 337 (1876); HAY., in Tokyo Bot. Mag. XVII. p. 31 (1903); WOLF, Monogr. Potent. p. 82 (1908); MASAMUNE, Prel. Rep. Veg. Yak. p. 81 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 481 (1931)

Syn. *Potentilla ancistrifolia*, MAK., in Tokyo Bot. Mag. XVI. p. 29 (1902)
Potentilla ancistrifolia, BUNGE, var. *Dickinsii*, (FR. et SAV.) KOIDZ., Cons. Ros. Jap. p. 180 (1913)

Potentilla Dickinsonii, FR. et SAV. var. *typica*, NAK., Rep. Veg. Diamond Mount. Cor. p. 175 (1918)

Nom. Jap. *Iwakinbai*

Leg. Ipse, Kuromidake, Jun. 11, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. This species grows as a lithophyte on granite rocks in the Pseudosasa Owatarii Association, and is not yet reported further south than this island.

Potentilla fragarioides, LINN. var. *Sprengeliana*, MAXIM., in Mél. Biolog. IX. p. 160 (1873); KOM., Fl. Mansh. II. p. 495 (1904); WALF., Monogr. Potent. p. 638 (1908); NAK., Fl. Kor. I. p. 195 (1909); KOIDZ., Cons. Ros. Jap. p. 182 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 81 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 482 (1931)

Syn. *Potentilla Sprengeliana*, LEHM., Monogr. p. 48, t. 1 (1835), et Revisio p. 45 (1856)

Nom. Jap. *Kizi-musiro*

Leg. Ipse, April. 5, 1927.

Distr. Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The species is found in open grasslands at low altitudes and has its southern limit in this island.

Duchesnea, SMITH, in Trans. Linn. Soc. X. p. 372 (1811); ENDL., Gen. Pl. n. 6361b (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 620 (1865); FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 33 (1888); KOIDZ., Consp. Ros. Jap. p. 168 (1913)
Syn. *Fragaria*, DC., Prodr. II. p. 569 (1825) partim.; BENTH. et HOOK. f., Gen. Pl. I. p. 620 (1865) partim.

Duchesnea indica, FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 33 (1888); PALIB., Consp. Fl. Kor. I. p. 80 (1898); DIELS, Fl. Cent. Chin. p. 401 (1900); KOM., Fl. Mansh. II. p. 489 (1904); NAK., Fl. Kor. I. p. 191 (1909), et II. p. 479 (1911); KOIDZ., Consp. Ros. Jap. p. 168 (1913); LOESN., Pfl.-welt. Kiautch. Geb. p. 133 (1918); MERR., Enum. Hainan Pl. p. 87 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 81 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 463 (1931)

Syn. *Duchesnea fragiformis*, SMITH, in Trans. Linn. Soc. X. p. 373 (1811); A. GRAY, Bot. Jap. p. 387 (1859)

Fragaria indica, ANDR., in Bot. Regt. t. 61 (1815); AIT., Hort. Kew. ed. 2, III. p. 273 (1811); DC., Prodr. II. p. 571 (1825); ROXB., Fl. Ind. II. p. 520 (1832); WIGHT, Ic. Pl. Ind. Or. t. 989 (1845); FR. et SAV., Enum. Pl. Jap. I. p. 129 (1875); HOOK. f., Fl. Brit. Ind. II. p. 343 (1878); FR., Pl. David, I. p. 110 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 240 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 452 (1899); MATSUM. & HAY., Enum. Pl. Formos. p. 124 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 95 (1912); MERR., Enum. Philip. Pl. II. p. 231 (1923)

Duchesnea chrysantha, MIQ., Fl. Ind. Bat. I. p. 372 (1887)

Nom. Jap. *Hebi-tigo*

Leg. Ipse, April. 5, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. Grows in waste lands and by the roadside at low altitudes; is rather common in the Far East.

Agrimonia, [TOURN., ex LINN. Syst. ed. 1 (1735) et Sp. Pl. ed. 1. p. 448 (1753); DC., Prodr. II. p. 587 (1825); ENDL., Gen. Pl. n. 6368 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 622 (1865); FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 43 (1888); KOIDZ., Consp. Ros. Jap. p. 210 (1913); LEMÉE, Dict. Gen. Pl. Phan. I. p. 124 (1929)

Agrimonia eupatoria, LINN., Sp. Pl. ed. 1. p. 448 (1753); THUNB., Fl. Jap. p. 195 (1784); DC., Prodr. II. p. 587 (1825); HOOK. f., Fl. Brit. Ind. II. p. 361 (1878); FORB. et HEMSL., Ind. Fl. Sin. I. p. 246 (1887); PALIB., Consp. Fl. Kor. I. p. 83 (1899); ITO et MATSUM., Tent. Fl. Lutch. I. p. 453 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 126 (1906); DUNN et TUTCH., Fl. Kwang. and Hongk. p. 95 (1912); KOIDZ., Consp. Ros. Jap. p. 210 (1913); LOESEN., Pfl.-welt. Kiautch. Geb. p. 134 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 81 (1929)

Syn. *Agrimonia pilosa*, LEDEB., Ind. Sem. Hort. Peterop. Supp. I. p. 1 (1823), et Fl. Ros. II. p. 32 (1844-46); FR. SCHM., Sachal. p. 127 (1868); KOM., Fl. Mansh. II. p. 519 (1904); NAK., Fl. Kor. I. p. 202 (1909)

- Agrimonia viscidula*, BUNGE, Enum. Pl. Chin. Bor. p. 100 (1832); FR. et SAV., Enum. Pl. Jap. I. p. 133 (1875)
Agrimonia viscidula, var. *japonica*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 38 (1867)
Agrimonia Eupatoria, var. *pilosa*, MAK., in Tokyo Bot. Mag. X. p. 60 (1896); YAMAZUTA, List Manch. Pl. p. 142 (1930)
Agrimonia pilosa, LEDEB. var. *viscidula*, KOM., Fl. Mansh. II. p. 520 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 195 (1912)
Agrimonia japonica, KOIDZ., in Tokyo Bot. Mag. XLIV. p. 104 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 458 (1931)

Nom. Jap. *Kim-mizuhiki*

Leg. Ipse, Nagatadake, Aug. 23, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Africa.

Note. The plant is found as undergrowth in open sunny places in the laurisilvae and the lauri-aciculisilvae and in the Pseudosasa Owatarii Association. It ranges from the sea level up to the summit of Miyanouradake, and is widely scattered through eastern Asia.

- Rosa**, [TOURN., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 146 (1737)] et Sp. Pl. ed. 1. p. 491 (1753); DC., Prodr. II. p. 597 (1825); ENDL., Gen. Pl. n. 6357 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 625 (1865); FOCKE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 46 (1888); KOIDZ., Consp. Ros. Jap. p. 221 (1913)
Syn. *Rhodophora*, NECK., Elem. II. p. 91 (1790)
Lowea, LINDL., Bot. Reg. t. 1261 (1829)
Hultenenia, REICHB., Handb. p. 243 (1837)
Rhodopsis, REICHB., Nom. p. 168 (1841)

Rosa polyantha, SIEB. et ZUCC. var. *genuina*, NAK., in Tokyo Bot. Mag. XL. p. 568 (1926); MASAMUNE, Prel. Rep. Veg. Yak. {p. 82 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 506 (1931)

- Syn.** *Rosa multiflora*, (non THUNB.) SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 128 (1845); FR. et SAV., Enum. Pl. Jap. I. p. 134 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 253 (1887); KOM., Fl. Mansh. II. p. 536 (1904); MATSUM., et HAY., Enum. Pl. Formos. p. 128 (1906); SCHNEID., Handb. Laubh. I. p. 540 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 225 (1912); KOIDZ., Consp. Ros. Jap. p. 230 (1913); REHD., in SARGENT Pl. Wils. II. pp. 304 et 334 (1915)
Rosa multiflora, var. *genuina*, FR. et SAV., Enum. Pl. Jap. I. p. 134 (1875), et II. p. 343 (1876); NAK., in Tokyo Bot. Mag. XXX. p. 236 (1916), et Fl. Sylv. Kor. VII. p. 30 t. 4 (1918)
Rosa multiflora, var. *adenophora*, FR. et SAV., Enum. Pl. Jap. I. p. 135 (1875) et II. p. 344 (1876); MATSUM., Ind. Pl. Jap. II. 2. p. 226 (1912) partim.
Rosa multiflora, THUNB. var. *typica*, MORI, Enum. Pl. Cor. p. 202 (1922)

Nom. Jap. *Noibara*

Leg. Ipse, ca. Ambô.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria.

Note. Grows in open lands, clearings and in waste lands.

var. *adenochoeta*, NAK., in Tokyo Bot. Mag. XL. p. 569 (1926); MAK. et NEM., Fl. Jap. ed. 2. p. 506 (1931)

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|---|----|----|----|----|----|----|----|----|----|------------------------|----|---|---|--|----|----|
| <i>Rubus Buergeri</i> , MIQ. | | | | | | + | + | + | + | + | | | | | | + |
| <i>Rubus Grayanus</i> , MAXIM. | | | + | + | + | | | | | | | | | | | |
| <i>Rubus nesiotes</i> , FOCKE. | | | + | | | | | | | | | | | | | |
| <i>Rubus okinawensis</i> , KOIDZ. | | | + | + | | | | | | | | | | | | |
| <i>Rubus palmatus</i> , THUNB. | | | | | | | | + | + | + | + | | | | | + |
| <i>Rubus pectinellus</i> , MAXIM. | + | + | | | | | | + | + | + | | | | | | + |
| <i>Rubus rosaefolius</i> , SMITH | + | + | + | | | | | + | + | + | | | | | | + |
| <i>R. r.</i> var. <i>Maximowiczii</i> , FOCKE | | | | | + | | | | | | | | | | | |
| <i>Rubus Sieboldii</i> , BL. | | | | + | + | + | + | + | + | + | | | | | | + |
| <i>Rubus triphyllus</i> , THUNB. | | + | + | + | + | + | + | + | + | + | + | | | | | + |
| <i>Rubus yakumontanus</i> , MASAMUNE | | | | | | | | | | | | | | | | |
| <i>Rubus yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | | |
| <i>Fragaria yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | | |
| <i>Potentilla chinensis</i> , SER. | | + | | + | | | | + | + | + | + | | | | | + |
| <i>Potentilla Dickinsonii</i> , FR. et SAV. | | | | | | | | + | + | + | + | + | | | | + |
| <i>Potentilla fragarioides</i> , LINN. var. <i>Sprengeliana</i> , MAXIM. | | | | | | | | + | + | + | + | + | | | | + |
| <i>Duchesnea indica</i> , FOCKE | + | + | + | + | | | | + | + | + | + | | | | | + |
| <i>Agrimonia eupatoria</i> , LINN. | | + | + | + | + | | | + | + | + | + | + | + | | | + |
| <i>Rosa polyantha</i> , SIEB. et ZUCC. var. <i>genuina</i> , NAK. | | + | | | | | | + | + | + | + | | | | | + |
| <i>R. p.</i> var. <i>adenochaeta</i> , NAK. | | | | | | | | + | | + | + | | | | | |
| <i>Rosa Wichuraiana</i> , CREP. | | + | + | + | | | | + | + | + | + | | | | | + |
| <i>R. W.</i> var. <i>paniculata</i> , MAK. et NEM. | | | | | | | | + | + | + | | | | | | |
| Total | 23 | 3 | 9 | 9 | 10 | 5 | 16 | 15 | 16 | 12 | 4 | 1 | | | 7 | 13 |
| Percentage | | 13 | 40 | 40 | 43 | 22 | 67 | 65 | 70 | 52 | 17 | 4 | | | 31 | 57 |
| | | | | | | | | | | | | | | | | |
| (Southern elements 14) | | | | | | | | | | (Northern elements 17) | | | | | | |

A few species of the Ryûkyû elements have their northern limit in this island, but in general the northern elements are predominant in this island. These facts lead us to conclude that in respect of this family the island has some relation with the northern regions, even though Yakusima, one of the islands that compose the Ryûkyû archipelago, has a few Ryûkyû elements in it.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. Grows in the laurisilvae from the sea level up to about 600 m.

In respect of this family, the island has no relationship with Formosa but close connection with Tanegasima and Amami-Ôsima. This fact shows that the islands which form the northern part of the Ryûkyû archipelago are closely related to one another in respect of this family.

Fabaceae

Fabaceae, LINDL., Veg. Kingd. ed. 3. p. 544 (1853)

Syn. *Leguminosae*, JUSS., Gen. p. 345 (1789); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 434 (1862)

Entada, ADANS., Fam. II. p. 318 (1763); DC., Prodr. II. p. 424 (1825); ENDL., Gen. Pl. n. 6832 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 589 (1865); LEMÉE, Dict. Gen. Pl. Phan. II. p. 872 (1930)

Syn. *Pusaetha*, [LINN., Fl. Zeyl. p. 236 (1747.)] O. KUNTZE, Rev. Gen. Pl. I. p. 204 (1891); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 122 (1891)

Gigalobium, P. BR., Hist. Jamaica. p. 362 (1756)

Adenopodia, PRESL, Epim. Bot. p. 206 (1850)

Entada phaseoloides, MERR., in Philipp. Journ. Sc. IX. Bot. p. 86 (1914), Enum. Philipp. Pl. II. p. 252 (1923), et Enum. Hainan Pl. p. 89 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 568 (1931)

Syn. *Mimosa entada*, LINN., Sp. Pl. ed. 1. p. 518 (1753)

Lens phaseoloides, LINN., in STICKMAN. Herb. Amb. p. 18 (1754), et Am. Acad. IV. p. 128 (1759)

Mimosa scandens, LINN., Sp. Pl. ed. 2. p. 1501 (1763)

Entada scandens, BENTH., in HOOK. Lond. Journ. Bot. IV. p. 332 (1842), et in Trans. Linn. Soc. XXX. p. 363 (1875); BAK., in HOOK. f., Fl. Brit. Ind. II. p. 287 (1878); ITO et MATSUM., Tent. Fl. Lutch. I. p. 442 (1899); MATSUM., in Tokyo Bot. Mag. XVI. p. 102 (1902), et Ind. Pl. Jap. II. 2. p. 261 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 116 (1906)

Nom. Jap. *Modama-kazura*

Leg. Ipse, Ambô, April. 1, 1927.

Distr. Amami-Ôsima, Okinawa, Taiwan, Philippines, China.

Note. The species is found in the laurisilvae near the seashore. It has its northern limit in this island.

Bauhinia, [LINN., Gen. Pl. ed. 1. p. 126 (1737)] et Sp. Pl. ed. 1. p. 374 (1753), DC., Prodr. II. p. 512 (1825); ENDL., Gen. Pl. n. 6790 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 575 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 147 (1891); LEMÉE, Dict. Gen. Pl. Phan. I. p. 526 (1929)

Syn. *Perlebica*, MART., Reiss. I. p. 555 (1828)

Bauhinia japonica, MAXIM., in Mél. Biolog. IX. p. 75 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 116 (1875); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 440 (1899), in Tokyo Bot. Mag. XVI. p. 101 (1902), et Ind. Pl. Jap. II. 2. p. 250 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 552 (1931)

Nom. Jap. *Hakama-kazura*

Leg. Ipse, Ambô, Jul. 1, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. Grows in lowlands especially in littoral forests.

Cassia, [TOURN., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 376 (1753); DC., Prodr. II. p. 489 (1825); ENDL., Gen. Pl. n. 6781 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 571 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 157 (1891); LEMÉE, Dict. Gen. Pl. Phan. I. p. 863 (1929)

Syn. *Grimaldia*, SCHRANK, in Denkschr. Ak. München. p. 103 t. 8 (1808)

Cassiana, RAFIN., in Amer. Monthly Mag. p. 266 (1818)

Cassia mimosoides, LINN. var. **nomame**, MAK., in Journ. Jap. Bot. I. p. 17 (1917); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 555 (1931)

Syn. *Cassia mimosoides*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 54 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 115 (1875); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 440 (1899), in Tokyo Bot. Mag. XVI. p. 100 (1902), et Ind. Pl. Jap. II. 2. p. 253 (1912); KOM., Fl. Mansh. II. p. 564 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 115 (1906); NAK., Fl. Kor. I. p. 141 (1909)

Nom. Jap. *Kawaraketumei*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria.

Note. Grows in open waste lands, especially on rocky grounds; rather common in the Far East.

Caesalpinia, LINN., Sp. Pl. ed. 1. p. 380 (1753); DC., Prodr. II. p. 481 (1825); ENDL., Gen. Pl. n. 6765 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 565 (1865); P. TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 173 (1891); LEMÉE, Dict. Gen. Pl. Phan. I. p. 739 (1929)

Caesalpinia nuga, AIT., Hort. Kew ed. 2. III. p. 32 (1811); ENGL. in Bot. Jahrb. VI. p. 64 (1885); MAXIM., in Mél. Biolog. XII. p. 449 (1886); MATSUM., in Tokyo Bot. Mag. XVI. p. 99 (1902), et Ind. Pl. Jap. II. 2. p. 251 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 115 (1906); DUNN et TUTCH., Fl. Kwang. and Hongk. p. 88 (1912); MERR., Enum. Philipp. Pl. II. p. 267 (1923); CHUN., Cat. Tree. and Shrub. Chin. p. 108 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 553 (1931)

Syn. *Guilandina nuga*, LINN., Sp. Pl. ed. 2. p. 546 (1762)

Nom. Jap. *Nantenkazura*

Leg. ca. Yudomari (fid. Z. TASHIRO)

Distr. Amami-Ôsima, Okinawa, Taiwan, Philippines, China.

Note. I have not collected this species in the island, but was told by Mr. TASHIRO

that he had collected it once near Yudomari. The species is not yet reported further north than this island.

Caesalpinia sepiaria, ROXB., Hort. Beng. p. 32 (1814) nomen, et Fl. Ind. II. ed. 2. p. 360 (1832); MIQ., Fl. Ind. Bat. I. 1. p. 109 (1855), et in Ann. Mus. Bot. Lugd. Bat. III. p. 54 (1867); BAK., in Hook. f. Fl. Brit. Ind. II. p. 256 (1878); MAXIM., in Mém. Biolog. XII. p. 449 (1886); FORB. et HEMSL., Ind. Fl. Sin. I. p. 206 (1887); MATSUM., in Tokyo Bot. Mag. XVI. p. 99 (1902), et Ind. Pl. Jap. II. 2. p. 251 (1912); MERR., Enum. Philipp. Pl. II. p. 268 (1923); CHUN., Cat. Tree. and Shrub. Chin. p. 108 (1924)

Syn. *Caesalpinia japonica*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 117 (1845); FR. et SAV., Enum. Pl. Jap. I. p. 114 (1875); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 553 (1931)

Nom. Jap. *Zyaketsu-ibaya*

Leg. Ipse, Ambô, Sept. 6, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, China, Philippines.

Note. Grows in sunny places at low altitudes.

Maackia, RUPR., in Bull. Acad. St. Petersb. XV.

p. 143 (1856)

Syn. *Cladrastis*, RAF., Neogenyt. I. (1825) p.p.; BENTH. et HOOK. f., Gen. Pl. I. 2. p. 554 (1865) p.p.; P. TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 197 (1891) partim.

Buergeria, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 53 (1867)

Maackia Tashiroi, MAK., in Tokyo Bot. Mag. XVI. p. 34 (1902), et Obs. Fl. Jap. II. p. 15 (1902); MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 585 (1931)

Syn. *Cladrastis Tashiroi*, YATABE, in Tokyo Bot. Mag. VI. p. 345 (1892); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 436 (1899), in Tokyo Bot. Mag. XVI. p. 97 (1902), et Ind. Pl. Jap. II. 2. p. 254 (1912)

Nom. Jap. *Sima-enzyu*

Leg. Ipse, Kurio, Jul. 4, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. Grows in wet but sunny spots, near the seashore.

Crotalaria, [DILL. ex LINN., Gen. ed. 1. p. 18 (1737)] et Sp. Pl. ed. 1. p. 714 (1753); DC., Prodr. II. p. 124 (1825); ENDL., Gen. Pl. n. 6472 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 479 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 226 (1891); LEMÉE, Dict. Gen. Pl. Phan. II. p. 381 (1930)

Syn. *Crotalaria*, SCOP., Introd. p. 305 (1777)

Crotularia, MEDIK., Phil. Bot. I. p. 206 (1789)

Crotalaria sessiliflora, LINN., Sp. Pl. ed. 2. p. 1004 (1763); BENTH., in Hook. Lond. Journ. Bot. II. p. 565 (1843); GRAY, Bot. Wildes. U. Sc. Explor. Exp. p. 390 (1854); FR. et SAV., Enum. Pl. Jap. I. p. 94 (1875); BAK., in HOOK. f. Fl. Brit. Ind. II. p. 73 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 152 (1886); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 396 (1899), in Tokyo Bot. Mag. XVI. p. 38 (1902), et Ind. Pl. Jap. II. 2. p. 255 (1912); KOM., Fl. Mansh. II. p. 639 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 103 (1906); NAK., Fl. Kor. I.

p.*144 (1909); MERR., Enum. Philipp. Pl. II. p. 273 (1923), et Enum. Hainan Pl. p. 92 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929)

Syn. *Crotalaria sessiliflora*, LINN. f. *eriantha*, MAK., in Tokyo Bot. Mag. XXVII. p. 81 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 560 (1931)

Nom. Jap. *Tanuki-mame*

Leg. Ipse, Ambô, Aug. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, Philippines.

Note. The plant grows as a weed in waste lands or near rice-fields, and is common in Eastern Asia.

Millettia, WIGHT et ARN., Prodr. Fl. Pen. Ind.

Or. I. p. 263 (1834); ENDL., Gen. Pl. n. 6715 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 498 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 270 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 481 (1932)

Syn. *Milletia*, MEISSN., Gen. p. 95 (1837)

Millettia japonica, A. GRAY, Bot. Jap. p. 386 (1858); FR. et SAV., Enum. Pl. Jap. I. p. 98 (1875); MATSUM., in Tokyo Bot. Mag. XVI. p. 46 (1902), et Ind. Pl. Jap. II. 2. p. 271 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 587 (1931)

Syn. *Wistaria japonica*, SIEB. et ZUCC., Fl. Jap. I. p. 88. t. 43 (1826)

Nom. Jap. *Doyô-huzi*

Leg. Ipse, Kurio, Jul. 4, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species grows in the lower part of the laurisilvae especially in somewhat sunny and dry spots. It has its southern limit in this island.

Aeschynomene, [LINN., Gen. Pl. ed. 1. p. 350

(1737)] et Sp. Pl. ed. 1. p. 713 (1753); DC., Prodr. II. p. 320 (1825); ENDL., Gen. Pl. n. 6605 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 2. p. 515 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 319 (1891); LEMÉE, Dict. Gen. Pl. Phan. I. p. 99 (1929)

Syn. *Gajati*, (RUMPH. ex) ADANS., Fam. II. p. 508 (1763)

Oeschinomene, POIR., in LAM., Encycl. IV. p. 447 (1797)

Aeschynomene indica, LINN., Sp. Pl. ed. 1. p. 713 (1753); DC., Prodr. II. p. 320 (1825); BENTH., Fl. Hongk. p. 79 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 45 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 100 (1875), et II. p. 324 (1876); FR., Pl. David. I. p. 97 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 170 (1887); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 408 (1899), et in Tokyo Bot. Mag. XVI. p. 73 (1902); MATSUM. et HAY., Enum. Pl. Formos. p. 106 (1906); NAK., Fl. Kor. I. p. 151 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 248 (1912); YABE, Enum. Pl. Manch. p. 72 (1912); DUNN et TUTCH., Fl. Kwangt. and Hongk. p. 77 (1912); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. II. p. 560 (1920); MERR., Enum. Philipp. Pl. II. p. 283 (1923), et Enum. Hainan Pl. p. 93 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 83 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 548 (1931)

Nom. Jap. *Kusanemu*

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, India.

Note. The plant is found in waste lands among rice-fields, and is common throughout Japan.

Desmodium, DESV., Journ. de Bot. I. p. 122, t. 5 (1813); DC., Prodr. II. p. 325 (1825); ENDL., Gen. Pl. n. 6615 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 519 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 327 (1891); LEMÉE, Dict. Gen. Pl. Phan. II. p. 556 (1930)
Syn. *Meibomia*, [MOEHR., Hort. Priv. p. 65 (1736)] ADANS., Fam. II. p. 509 (1763)
Phyllodium, DESV., in Journ. de Bot. I. p. 123, t. 5 (1813)

Desmodium Buergerii, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 45 (1867); MERR., in Philipp. Journ. Sc. V. Bot. p. 85 (1910), et Enum. Philipp. Pl. II. p. 284 (1923)

Syn. *Desmodium polycarpum*, (DC.) MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 416 (1899) p.p., et Ind. Pl. Jap. II. 2. p. 260 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 107 (1906) p.p.; CHUN., Cat. Tree. and Shrub. Chin. p. 115 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 565 (1931)

Desmodium heterocarpum, DC. var. *Buergeri*, HOSOKAWA, in Journ. Trop. Agr. IV. p. 201 (1932)

Nom. Jap. *Sibahagi*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, China, Philippines.

Note. Grows as secondary products on open sunny places in low lands.

Desmodium laburnifolium, DC., Prodr. II. p. 337 (1825); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 46 (1876); MAXIM., in Mém. Biolog. XII. p. 439 (1886); MATSUM. in ITO et MATSUM. Tent. Fl. Lutch. I. p. 413 (1899), in Tokyo Bot. Mag. XVI. p. 75 (1902), et Ind. Pl. Jap. II. 2. p. 258 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 107 (1906); MORI, Enum. Pl. Cor. p. 214 (1922); CHUN., Cat. Tree. and Shrub. China p. 115 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929)

Syn. *Desmodium caudatum*, DC., Prodr. II. p. 337 (1825); MAK. et NEM., Fl. Jap. ed. 2. p. 562 (1931)

Nom. Jap. *Misonaosi*

Leg. Ipse, Miyanoura, Aug. 5, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. Grows on low lands near forest edges; widely distributed in warmer countries in Asia.

Desmodium laxum, DC., in Ann. Sc. Nat. I. 4. p. 102 (1825), et Prodr. II. p. 336 (1825); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 415 (1899), in Tokyo Bot. Mag. XVI. p. 76 (1902), et Ind. Pl. Jap. II. 2. p. 258 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 107 (1906); MERR., Enum. Philipp. Pl. II. p. 287 (1923), et Enum. Hainan Pl. p. 94 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 564 (1931)

Syn. *Meibomia leptopus*, O. KUNTZE, Rev. Gen. Pl. I. p. 198 (1891)

Nom. Jap. *Ryûkyû-nusubito-hagi*

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Philippines.

Note. The species is often found as undergrowth in the laurisilvae, and is not yet reported further north than this island.

var. *Kiusiuuanum*, MATSUM., in Tokyo Bot. Mag. XVI. p. 76 (1902); MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 565 (1931)

Nom. Jap. Tukusi-nusubito-hagi

Leg. Ipse, Yudomari, 1928.

Distr. Kyûsyû.

Note. The plant is often found as undergrowth in the laurisilvae, and the variety is not yet reported in lands further south than this island.

Desmodium microphyllum, DC., Prodr. II. p. 337 (1825); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 45 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 100 (1875); MAXIM., in Mém. Biolog. XII. p. 445 (1886); MATSUM., in Tokyo Bot. Mag. XVI. p. 78 (1902), et Ind. Pl. Jap. II. 2. p. 258 (1912); MERR., Enum. Philipp. Pl. II. p. 287 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 565 (1931)

Syn. Hedysarum microphyllum, THUNB., Fl. Jap. p. 284 (1784)

Desmodium parvifolium, DC., in Ann. Sc. Nat. I. 4. p. 100 (1825), et Prodr. II. p. 334 (1825); BENTH., Fl. Hongk. p. 84 (1861); BAK., in HOOK. f. Fl. Brit. Ind. II. p. 174 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 174 (1887); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 418 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 107 (1906); HAY., Fl. Mont. Formos. p. 74 (1908), et Ic. Pl. Formos. I. p. 186 (1911)

Nom. Jap. Hime-nohagi

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, China, Philippines.

Note. I have not collected the species but Dr. KUDO once collected it in this island.

Desmodium racemosum, DC., Prodr. II. p. 337 (1825); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); NAK., in Tokyo Bot. Mag. XLIV. p. 30 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 565 (1931)

Syn. Hedysarum racemosum, (non AUFLET) THUNB., Fl. Jap. p. 285 (1784); GMELINS, Syst. Nat. VIII. p. 1123 (1791)

Desmodium oxyphyllum, DC., in An. Sc. Nat. IV. p. 102 (1825), et Prodr. II. p. 336 (1825); MATSUM., in Tokyo Bot. Mag. XVI. p. 77 (1902), et Ind. Pl. Jap. II. 2. p. 259 (1912)

Desmodium japonicum, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 46 (1867) partim; FR. et SAV., Enum. Pl. Jap. I. p. 100 (1875)

Nom. Jap. Nusubito-hagi

Leg. Ipse, Jul. 21, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. A common species in Japan; in Yakusima the plant is found in lowlands in secondary areas.

Desmodium Tashiroi, MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 415 (1899), in Tokyo Bot. Mag. XVI. p. 77 (1902), et Ind. Pl. Jap. II. 2. p. 260 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 566 (1931)

Nom. Jap. Tokiwa-yabu-hagi

Leg. A. KIMURA! 1922.

Distr. Sikoku, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa.

Note. Grows as undergrowth in the laurisilvae.

Lespedeza, (L. C. RICH.) in MICHX., Fl. Bor.-Amer. II. p. 70, t. 29 (1803 ; DC., Prodr. II. p. 348 (1825) p.p.; ENDL., Gen. Pl. n. 6623 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 524 (1865) p.m.; TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 332 (1891) p.m.; NAK., Lesp. Jap. & Kor. p. 1 (1927); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 52 (1932),

Syn. *Hedysarum*, LINN., Sp. Pl. ed. 1. p. 745 (1753) p.p.

Lespedezia, SPRENG., Syst. III. p. 202 (1826),

Campylotropis, BUNGE, Pl. Monogr. Chin. p. 6 (1835)

Phlebosporium, HASSK., in Flora XXX. p. 508 (1847)

Lespedeza bicolor, var. *japonica*, NAK., in Tokyo Bot. Mag. XXXVII. p. 73 (1923), et Lesp. Jap. & Kor. p. 65 cum f. (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 579 (1931)

Syn. *Lespedeza bicolor*, non TURCZANINOW) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 47 (1867); MAXIM., in Act. Hort. Petrop. II. p. 355 (1873) p.p.; FR. et SAV., Enum. Pl. Jap. I. p. 101 (1875); MATSUM., in Tokyo Bot. Mag. XVI. p. 51 (1902) p.p.; MAK. et NEM., Fl. Jap. ed. I. p. 734 (1925) p.p.

Lespedeza bicolor, var. *intermedia*, non MAXIM.) MATSUM., in Tokyo Bot. Mag. XVI. p. 69 (1902) p.p., et Ind. Pl. Jap. II. 2. p. 267 (1912) p.p.

Nom. Jap. *Yama-hagi*

Leg. Jun. 6, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea.

Note. The variety is found in sunny places at low altitudes as a secondary community; the plant is not yet reported further south than this island.

Lespedeza cuneata, G. DON, Gen. Hist. II. p. 307 (1832); BENTH., in Hook. Journ. Bot. IV. p. 47 (1852), Fl. Hongk. p. 85 (1861), et Fl. Austr. II. p. 240 (1864); NAK., in Tokyo Bot. Mag. XXXVII. p. 74 (1923) p.p., et Lesp. Jap. & Kor. p. 98 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 579 (1931)

Syn. *Hedysarum junceum*, LINN. f., Decas. Prima. Pl. t. 4. (1762); LINN., Sp. Pl. ed. 2. p. 1053 (1763); ROXB., Fl. Ind. III. p. 362 (1832)

Hedysarum sericeum, (non MILLER THUNB., Fl. Jap. p. 287 (1784); WILLDN., Sp. Pl. III. p. 1182 (1800)

Asparathus cuneata, D. DON, Prodr. Fl. Nepal. p. 246 (1825)

Lespedeza juncea, (non PERSOON, DC., Prodr. II. p. 348 (1825) p.p.; FR. et SAV., Enum. Pl. Jap. I. p. 103 (1875)

Indigofera chinensis, VOGEL, in Nov. Act. Acad. Leopold.-Carol. XIX. Supp. p. 14 (1842); WALP., Repert. I. p. 669 (1842); FORB. et HEMSL., Ind. Fl. Sin. I. p. 156 (1887)

Lespedeza argyrea, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 120 (1845)

Lespedeza sericea, (non BENTH.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 49 (1867); MAXIM., in Act. Hort. Petrop. II. p. 368 (1873); BAK., in HOOK. f. Fl. Brit. Ind. II. p. 142 (1876); BOISSN., in Bull. Herb. Boiss. VI. p. 671 (1898); SCHNEID., Ill. Handb. Laubh. II. p. 114. ff. 70 l, 71 k.m. (1906), et in SARGENT Pl. Wils. II. p. 105 (1914)

Lespedeza juncea, var. *sericea*, MIQ., apud FORB. et HEMSL. Ind. Fl. Sin. I. p. 181 (1887); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 406 (1899); DIELS, Fl. Cent. Chin. p. 415 (1900) p.p.; MATSUM., in Tokyo Bot. Mag. XVI. p. 71 (1902); MATSUM. et HAV., Enum. Pl. Formos. p. 105 (1906); NAK., Fl. Kor. I. p. 158 (1909)

Nom. Jap. Medohagi

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in lowlands, in waste lands and along the roadside and is common in the Far East.

Lespedeza cyrtobotrya, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 48 (1867) p.p.; MAXIM., in Act. Hort. Petrop. II. p. 357 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 102 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 180 (1887); MATSUM., in Tokyo Bot. Mag. XVI. p. 70 (1902), et Ind. Pl. Jap. II. 2. p. 268 (1912); NAK., Fl. Kor. I. p. 155 (1909), et Lesp. Jap. & Kor. p. 42 (1927); SCHNEID., Ill. Handb. Laubh. II. p. 113 (1909), et in SARGENT Pl. Wil. II. p. 112 (1914); YABE, Enum. Pl. Manch. p. 77 (1912)

Syn. *Lespedeza virgata*, (non DC.) SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 121 (1845) p.p.

Campylotropis virgata, MIQ., Fl. Ind. Bat. I. p. 230 (1855)

Lespedeza bicolor, f. *microphylla*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 47 (1867) p.p.

Lespedeza cyclobotrya, FORB. et HEMSL., Ind. Fl. Sin. I. p. 180 (1887)

Nom. Jap. Maruba-hagi

Leg. Onoaida, NAOHARA! Jul. 22, 1930.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria, China.

Note. The species is found in low-lying and open land, and is not yet reported further south than this island.

Lespedeza pilosa, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 121 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 49 (1867); MAXIM., in Act. Hort. Petrop. II. p. 381 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 102 (1875); MATSUM., in Tokyo Bot. Mag. XVI. p. 72 (1902), et Ind. Pl. Jap. II. 2. p. 268 (1912); NAK., Fl. Kor. I. p. 154 (1909), et Lesp. Jap. & Kor. p. 80 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 581 (1931)

Syn. *Hedysarum pilosum*, THUNB., Fl. Jap. p. 290 (1784); WILLD., Sp. Pl. III. p. 119 (1800)

Desmodium pilosum, DC., Prodr. II. p. 337 (1825)

Nom. Jap. Nekohagi

Leg. Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. Grows by the roadside and in fallow fields.

Lespedeza serpens, NAK., Lesp. Jap. & Kor. p. 75 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 582 (1931)

Syn. *Lespedeza sericea*, var. *latifolia*, MAXIM., in Act. Hort. Petrop. II. p. 369 (1873) partim.

Lespedeza prostrata, (non PURSH NAK., in Tokyo Bot. Mag. XXXVI. p. 66 (1922))

Nom. Jap. Hai-medohagi

Leg. April. 3. 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima.

Note. Grows on open waste lands or along the roadside near the sea level.

Microlespedeza, MAK., in Tokyo Bot. Mag.

XXVIII. p. 183 (1914)

Syn. *Lespedeza*, subg. *microlespedeza*, MAXIM., Syn. Lesp. pp. 346. 382 (1873)

Kummerowia, SCHINDLER, in Fed. Rep. X. p. 403 (1912)

Microlespedeza Makinoi, TANAKA, Gakugei, I. p. 204 (1925 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929)

Syn. *Lespedeza striata*, HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 262 (1836-40) ; BENTH., Fl. Hongk. p. 85 (1861) ; MIQ., in Ann. Mus. Bat. III. p. 49 (1867) ; MAXIM., in Act. Hort. Petrop. II. p. 382 1873 ; FR. et SAV., Enum. Pl. Jap. I. p. 102 (1875) ; FORB. et HEMSL., Ind. Fl. Sin. I. p. 182 (1887) ; MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 406 1899 , et in Tokyo Bot. Mag. XVI. p. 72 (1902), et Ind. Pl. Jap. II. 2. p. 268 1912 ; MATSUM. et HAY., Enum. Pl. Formos. p. 105 (1906

Kummerowia striata, SCHINDER, in Fed. Rep. Sp. Nov. X. p. 403 (1912

Microlespedeza striata, MAK., in Tokyo Bot. Mag. XXVIII. p. 182 (1914 ; MORI, Enum. Pl. Cor. p. 219 (1922 ; YAMAZUTA, List Manch. Pl. p. 167 (1930) ; MAK. et NEM., Fl. Jap. ed. 2. p. 587 (1931

Nom. Jap. *Yahazu-sô*

Leg. Ipse, Jul. 27, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Grows by the roadside, or in open dry lands.

Pongamia, VENT., Jard. Malmaison, p. 28. t. 28

1803 ; DC., Prodr. II. p. 416 1825 ; ENDL., Gen. Pl. n. 6713 1836-40 ; BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 549 (1865 ; TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 344 (1891)

Syn. *Pongam*, ADANS., Fam. II. p. 322 1763

Galedupa, LAM., Encycl. II. p. 594 (1786

Cajum, O. KUNTZE, Rev. Gen. Pl. I. p. 167 1891

Pungamia, LAM., Illustr. II. t. 603 1894

Pongamia pinnata, MERR., Interpret. Herb. Amb. p. 271 1917 , Enum. Philipp. Pl. II. p. 298 (1923 , et Enum. Hainan Pl. p. 96 1927 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 86 1929

Syn. *Cytisus pinnatus*, LINN., Sp. Pl. ed. 1. p. 741 1753

Robinia mitis, LINN., Sp. Pl. ed. 2. p. 1044 (1763

Galedupa indica, LAM., Encycl. II. p. 594 (1786 excl. syn. RUMPH.

Delbergia arborea, WILLD., Sp. Pl. III. p. 901 1803

Pongamia glabra, VENT., Jard. Malmaison, I. p. 28, t. 28 (1803 ; DC., Prodr. II. p. 416 (1825) ; BENTH., Fl. Hongk. p. 94 (1861) ; BAK., in HOOK. f. Fl. Brit. Ind. II. p. 240 (1876) ; FORB. et HEMSL., Ind. Fl. Sin. I. p. 200 (1887 ; MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 434 (1899 , in Tokyo Bot. Mag. XVI. p. 96 (1902), et Ind. Pl. Jap. II. 2. p. 274 1912 ; MATSUM. et HAY., Enum. Pl. Formos. p. 114 (1906) ; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 86 (1924) ; MAK. et NEM., Fl. Jap. ed. 2. p. 594 (1931

Caju pinnatum, O. KUNTZE, Rev. Gen. Pl. I. p. 167 (1891

Nom. Jap. *Kuro-yona*

Leg. Y. KUDO ! Aug. 1907.

Distr. Amami-Ôsima, Okinawa, Taiwan, China, Philippines.

Note. I have not collected this species in the island, but was informed by Dr. KUDO that he had collected it in the island. The species is not yet reported further north than this island.

Vicia, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 734 (1754); DC., Prodr. II. p. 354 (1825); ENDL., Gen. Pl. n. 6581 (1836-40); BENTH., in. BENTH. et HOOK. f. Gen. Pl. I. 2. p. 524 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 350 (1891)

Syn. *Faba*, [TOURN., ex LINN. Syst. ed. 1 (1735)] ADANS., Fam. II. p. 331 (1763)

Ervum, [TOURN., ex LINN. Gen. Pl. ed. 1. p. 217 (1737)] et Sp. Pl. ed. 1. p. 738 (1753)

Endiusa, ALEF., in Oesterr. Bot. Ziet. IX. p. 359 (1859)

Vicia hirsuta, KOCH, Synops. Fl. Germ. ed. 1. p. 191 (1837); FR. et SAV., Enum. Pl. Jap. I. p. 104 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 184 (1887); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 419 (1899), in Tokyo Bot. Mag. XVI. p. 80 (1902), et Ind. Pl. Jap. II. 2. p. 279 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 109 (1906); NAK., Fl. Kor. I. p. 161 (1909); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 81 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 604 (1931)

Syn. *Ervum hirsutum*, LINN., Sp. Pl. ed. 1. p. 738 (1753); DC., Prodr. II. p. 366 (1825)

Nom. Jap. *Suzume-no-endô*

Leg. ca. Issô, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The plant grows in cultivated fields or on waste lands, and is rather common throughout Japan.

Vicia sativa, LINN., Sp. Pl. ed. 1. p. 736 (1753), et Fl. S. n. 634 (1755); DC., Prodr. II. p. 360 (1825); FORB. et HEMSL., Ind. Fl. Sin. II. p. 185 (1887); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 419 (1899), in Tokyo Bot. Mag. XVI. p. 79 (1902), et Ind. Pl. Jap. II. 2. p. 280 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 109 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 81 (1912); MORI, Enum. Pl. Cor. p. 224 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 604 (1931)

Nom. Jap. *Yahazu-endô*

Leg. Ipse, Mart. 21, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in cultivated or waste lands, and is common throughout Japan.

Vicia tetrasperma, MOENCH, Meth. p. 148 (1794); BENTH., Handb. Brit. Fl. p. 128 (1866); MIQ., Prolisio Jap. p. 239 (1865-67); FR. et SAV., Enum. Pl. Jap. I. p. 105 (1875); BAK., Fl. Brit. Ind. II. p. 177 (1876), FORB. et Hemsl., Ind. Fl. Sin. I. p. 185 (1887); MATSUM., in ITO et MATSUM. Tent. Fl. Lutch. I. p. 419 (1899), in Tokyo Bot. Mag. XVI. p. 8 (1902), et Ind. Pl. Jap. II. 2. p. 280 (1912); DIELS, Fl. Cent. Chin. p. 416 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 109 (1906); NAK., Fl. Kor. I. p. 161 (1909), et II. p. 467 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 81 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 605 (1931)

Syn. *Ervum tetraspermum*, LINN., Sp. Pl. ed. 1. p. 738 (1753); DC., Prodr. II. p. 367 (1825); LEDEB., Fl. Ros. I. p. 663 (1842); HALLIER, Flora von Deutschland XXIV. p. 179. t. XVII. 3. (1886)

Nom. Jap. *Kasuma-gusa*

Leg. Ipse, April. 1, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species grows in cultivated fields or on semicultivated land and is common from Honsyû to Formosa.

Lathyrus, [TOURN., ex LINN. Syst. ed. 1 (1735.)

et Sp. Pl. ed. 1. p. 729 (1753); DC., Prodr. II. p. 369 (1825; ENDL., Gen. Pl. n. 6582 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 525 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 353 (1891)

Syn. *Pisum*, [TOURN., ex LINN. Gen. Pl. ed. 1. p. 222 (1737) p.p.]

Ochrus, TOURN., ex ADANS. Fam. II. p. 330 (1763)

Lathyrus maritimus, BIGEL., Fl. Bost. ed. 2. p. 268 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 45 (1867); MAXIM., in Mém. Biolog. IX. p. 60 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 105 (1875); MATSUM., in Tokyo Bot. Mag. XVI. p. 82 (1902), et Ind. Pl. Jap. II. 2. p. 266 (1912); KOM., Fl. Mansh. II. p. 626 (1904); NAK., Fl. Kor. I. p. 163 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); HULT., Fl. Kamtch. III. p. 114 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 577 (1931); TATEWAKI, Phytog. Middl. Kuril. pp. 202, 230, 289 (1932)

Nom. Jap. *Hamaendô*

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Distr. Kamtchatka, Saghalien, Northern Kuriles, Southern Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, Manchuria, China.

Note. This is a psammophyte which grows along the seashore under the influence of salt water, and is distributed throughout Eastern Asia.

Falcata, GMEL., Syst. II. p. 1131 (1891)

Syn. *Amphicarphaea*, (*Amphicarpha*) ELL., in Journ. Acad. Phil. I. p. 372 (1818; ENDL., Gen. Pl. n. 6630 (1836-40); BENTH. et HOOK., Gen. Pl. I. 2. p. 529 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 359 (1891)

Falcata comosa, KUNTZ, var. *japonica*, MAK., in Tokyo Bot. Mag. XX. p. 82 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 569 (1931)

Syn. *Glycine monoica*, (non LINN.) THUNB., Fl. Jap. p. 283 (1784)

Glycine javanica, (non LINN.) THUNB., in Trans. Linn. Soc. II. p. 340 (1794)

Amphicarphaea Edgeworthii, var. *japonica*, OLIV., in Journ. Linn. Soc. IX. p. 164 (1867); MAXIM., in Mém. Biolog. IX. p. 69 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 107 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 188 (1887)

Shuteria trisperma, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 51 (1867)

Falcata japonica, KOM., Fl. Mansh. II. p. 630 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 262 (1912); MORI, Enum. Pl. Cor. p. 215 (1922)

Nom. Jap. *Ginnane*

Leg. Y. KUDO! Aug. 1907.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, Manchuria, China.

Note. I have not found this species but Dr. KUDO told me that he had collected it in the island; the species is rather common throughout Japan proper, but is not yet reported further south than Amami-Ôsima.

Dumasia, DC., in Ann. Sc. Nat. IV. p. 96 (1825);
et Prodr. II. p. 241 (1825); ENDL., Gen. Pl. n. 6631 (1836-40); BENTH., in BENTH.
et HOOK. f. Gen. Pl. I. 2. p. 529 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-
fam. III. iii. p. 359 (1891); LEMÉE, Dict. Gen. Pl. Phan. II. p. 758 (1930)

Syn. *Notonia*, WIGHT et ARN., Prodr. Fl. Pen. Ind. Or. I. p. 207 (1834)

Dumasia truncata, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 119 (1845); MIQ., in Ann.
Mus. Bot. Lugd. Bat. III. p. 52. (1867); MAXIM., in Mém. Biolog. IX. p. 69 (1873);
MATSUM., in Tokyo Bot. Mag. XVI. p. 84 (1902), et Ind. Pl. Jap. II. 2. p. 261
(1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 (1929); MAK. et NEM., Fl. Jap.
ed. 2. p. 568 (1931)

Nom. Jap. *Nosasage*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is occasionally found on the edges of forests at low altitudes.
It has its southern limit in this island.

Pueraria, DC., in Ann. Soc. Nat. IX. p. 97 (1825),
et Prodr. II. p. 240 (1825); ENDL., Gen. Pl. n. 6632 (1836-40); BENTH., in BENTH.
et HOOK. f. Gen. Pl. I. 2. p. 537 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam.
III. iii. p. 370 (1891)

Syn. *Neustanthus*, BENTH., in MIQ. Pl. Jungh. I. p. 234 (1855)

Pueraria Thunbergiana, (SIEB. et ZUCC.) BENTH., in Journ. Linn. IX. p. 122 (1865);
MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 52 (1867); FR. et SAV., Enum. Pl. Jap.
I. p. 189 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 191 (1887); MATSUM., in
ITO et MATSUM. Tent. Fl. Lutch. I. p. 426 (1899); MATSUM. et HAY., Enum. Pl.
Formos. p. 111 (1906); NAK., Fl. Kor. I. p. 165 (1909); DUNN et TUTCH., Fl.
Kwang. & Hongk. p. 83 (1912); LOESN., Pfl.-welt Kiaut. Geb. p. 144 (1918);
MERR., Enum. Philipp. Pl. II. p. 312 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p.
86 (1929)

Syn. *Dolichos hirsutus*, THUNB., in Trans. Linn. Soc. II. p. 339 (1794) (non *Pueraria*
hirsuta, KURZ.)

Pachyrhizus Thunbergiana, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 237 (1846)
Neustanthus chinensis, BENTH., Fl. Hongk. p. 86 (1861)

Pueraria hirsuta, MATSUM., in Tokyo Bot. Mag. XVI. p. 91 (1902), et Ind. Pl.
Jap. II. 2. p. 275 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 595 (1931)

Nom. Jap. *Kuzu*

Leg. Ipse, Mugio, Sept. 6 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa,
Taiwan, Korea, China, Philippines.

Note. The species grows in low-lying open lands, on the edges of forests, and in
clearings, from the sea level up to about 600 m and is common throughout Japan.

Canavalia, DC., Mém. Légum. p. 375 (1825), et
Prodr. II. p. 403 (1825); ENDL., Gen. Pl. n. 6663 (1836-40); BENTH., in BENTH.
et HOOK. f. Gen. Pl. I. 2. p. 537 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam
III. iii. p. 371 (1891); LEMÉE, Dict. Gen. Pl. Phan. I. p. 812 (1929)

Syn. *Canavali*, ADANS., Fam. II. p. 325 (1763)

Wenderothia, SCHLECHTD., in Linn. XII. p. 330 (1838)

Cryptophaseolus, O. KUNTZE, Rev. Gen. Pl. I. p. 176 (1891)

Canavallia lineata, DC., Prodr. II. p. 404 (1825); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 51 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 110 (1875); MATSUM. in ITO et MATSUM. Tent. Fl. Lutch. p. 425 (1899), in Tokyo Bot. XVI. p. 91 (1902), et Ind. Pl. Jap. II. 2. p. 252 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 110 (1906); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 258 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 554 (1931)

Syn. *Dolichos lineatus*, (non AUBL.) THUNB., Fl. Jap. p. 280 (1784)

Canavalia maritima, (non THOUARS.) MASAMUNE, Prel. Rep. Veg. Yak. p. 84 (1929)

Nom. Jap. *Hama-natamane*

Leg. Ipse, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins.

Note. This is a psammophyte which grows near sandy or rocky beaches and covers the ground.

Dunbaria, WIGHT et ARN., Prodr. Fl. Pen. Ind.

Or. I. p. 258 (1834); ENDL., Gen. Pl. n. 6682 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 541 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 372 (1891); LEMÉE, Dict. Gen. Pl. Phan. II. p. 760 1930

Dunbaria villosa, MATSUM., in Tokyo Bot. Mag. XVI. p. 95 (1902), et Ind. Pl. Jap. II. 2. p. 261 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 85 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 568 (1931)

Syn. *Glycine villosa*, THUNB., Fl. Jap. p. 283 1784

Atylosia subrhombea, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 51 1867; FR. et SAV., Enum. Pl. Jap. I. p. 112 (1875), et II. p. 327 (1876); MAK., in Tokyo Bot. Mag. V. p. 166 (1891)

Atylosia villosa, MAXIM., in Mém. Biolog. IX. p. 69 (1873)

Nom. Jap. *Noazuki*

Leg. Ipse, Aug. 6, 1924

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan.

Note. Found in sunny spots of waste lands; rather common throughout Japan.

Rhynchosia, LOUR., Fl. Cochinch. p. 460 1790;

DC., Prodr. II. p. 384 (1825); ENDL., Gen. Pl. n. 6692 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 2. p. 542 (1865); TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iii. p. 373 (1891)

Syn. *Dolicholus*, MEDIK., in Vorles Churpf. Phys. Ges. II. p. 354 (1787)

Rhynchosia, ZOLL. et MOR., in Nat. Geneesk. Arch. Ned. Ind. III. p. 78 (1846)

Rhynchosia volubilis, LOUR., Fl. Cochinch. p. 460 (1790); DC., Prodr. II. p. 385 (1825); BENTH., Fl. Hongk. p. 90 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 53 (1867); MAXIM., in Mém. Biolog. IX. p. 70 (1873); FORB. et HEMSL., Ind. Fl. Sin. I. p. 196 (1887); MATSUM., in Tokyo Bot. Mag. XVI. p. 95 (1902), et Ind. Pl. Jap. II. 2. p. 275 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 113 (1906); NAK., Fl. Kor. I. p. 166 (1909); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 85 (1912); MERR., Enum. Philipp. Pl. II. p. 316 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 86 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 596 (1931)

Nom. Jap. *Tankiri-mame*

Leg. Y. KUDO! Aug. 1907.

| Names of Plants | Regions | | | | | | | | | | |
|---|---------|-------------|--------|--------|---------|--------------|---------|------------|-------|-------|---|
| | | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsū | Prop. | |
| Entada phaseoloides, MERR. | | + | | + | | | | | | | + |
| Bauhinia japonica, MAXIM. | | | | | + | + | + | | + | | |
| Cassia mimosoides, LINN. var. nomame, MAK. | | | | + | + | + | | + | + | | |
| Caesalpinia nuga, AIT. | | + | | + | + | + | | | | | |
| Caesalpinia sepiaria, ROXB. | | + | | | + | + | | + | + | | + |

(Southern element 29) | (Northern elements 30)

Entada phaseoloides, *Pongamia pinnata* and *Vigna marina* have their northern limit in this island and some others have their southern limit here. In view of the fact that seeds of *Entada*, *Pongamia*, and *Vigna* have been carried to this island by sea currents, I can not consider these species important for deciding the phytogeographical position of the island. And as for *Pongamia*, there is a grave doubt that it is really an indigenous plant of this island. These facts have led me to the conclusion that the island has a closer relation to the northern floral regions than to the southern ones.

Geraniaceae

Geraniaceae, J. ST.-HILL., Expos. Famil. II. p. 51 (1805)

Syn. *Gerania*, JUSS., Gen. Pl. p. 268 (1786)

Geranium, [TOURN., ex LINN. Syst. ed. 1 (1735)]
et Sp. Pl. ed. 1. p. 676 (1753); ENDL., Gen. Pl. n. 6046 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 272 (1862); K. REICHE., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 8 (1889); KUNTH, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 19a. p. 53 (1931); LEMÉE, Dict. Gen. Pl. Phan. III. p. 235 (1931)

Geranium nepalense, SWEET, var. *Thunbergii*, (SIEB. et ZUCC.) KUDO, in KUDO et TAKENOUTI, List Sp. Vascular. Pl. Fukuoka Pr. p. 22 (1925)

Syn. *Geranium palustre*, (non LINN.) THUNB., Fl. Jap. p. 268 (1784)

Geranium Thunbergii, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 136 (1846)

Geranium nepalense, (non SWEET) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 13 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 69 (1875), et II. p. 306 (1876); MAXIM., in Mém. Biolog. X. p. 615 (1880); NAK., in Tokyo Bot. Mag. XXIII. p. 101 (1909), et Fl. Kor. II. p. 456 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 610 (1931)

Geranium sibiricum, (non LINN.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 13 (1867)

Geranium Kramerii, FR. et SAV., Enum. Pl. Jap. II. p. 306 (1876)

Nom. Jap. *Húrosó*

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea.

Note. The variety is found in low-lying open lands near the sea level.

Geranium Yoshiianum, KOIDZ., in MATSUM. Ind. Pl. Koishik. III. p. 93. Pl. 192 (1917) ·
MASAMUNE, Prel. Rep. Veg. Yak. p. 87 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 611 (1931)

Nom. Jap. *Yakusima-húrosó*

Leg. Miyanoura, Jul. 28, 1928.

Note. This endemic species is found in the Pseudosasa Owatarii Association.

| Names of Plants | Regions | | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------|-------------|-------|--------|-------|-------|-------------------------|-----------|------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsū Prop. | Kyūsū | Sikoku | Honsū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Ussuri | China |
| Geranium nepalense, SWEET, var. Thunbergii, KUDO | | | | | + | + | + | | + | + | + | + | | | | |
| Geranium Yoshiianum, KOIDZ. | | | | | | | | | | | | | | | | |

In respect of this family the island seems to have some relation with the northern regions, for there are two representatives of this family in Yakusima, and one of them is an endemic species which is related to *Geranium shikokianum*, and the other one is widely distributed in lands further north than the island. From these two facts I can not avoid considering the island as forming an integral floral region with those regions (Honsyû, Sikoku & Kyûsyû).

Oxalidaceae

Oxalidaceae, LINDL., Nat. Syst. ed. 2. p. 140 1836

Oxalis, [LINN., Gen. Pl. ed. 1. p. 134 (1737) et Sp. Pl. ed. 1. p. 433 1753]; THUNB., Diss. Oxalid. (1781); DC., Prodr. I. p. 690 (1824); ENDL., Gen. Pl. n. 6058 (1836-40), et Ench. Bot. p. 624 (1841); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 276 (1862); KUNTH, in ENGL. Pfl.-reich. IV. 130 (Heft. 95) p. 43 (1930), et in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 19a. p. 25 (1931); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 954 (1932)

Syn. *Acetosella*, [MOEHR., Hort. Pric. p. 4 (1736)] O. KUNTZE, Rev. Gen. Pl. I. p. 90 (1891)

Oxys, TOURN., ex ADANS. Fam. Pl. II. p. 388 (1763)

Oxallis, NORONHA, in Veth. Bat. Gen. V. ed. 1. Art. IV. p. 21 1790)

Xanthoxalis, SMALL, Fl. Southeast. U. S. p. 666 (1903)

Oxalis corniculata, subsp. *repens*, (THUNB.) MASAMUNE

Syn. *Oxalis repens*, THUNB., Diss. Oxal. p. 16 (1781); MERR., Enum. Philipp. Pl. II. p. 323 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 87 (1929)

Oxalis corniculata, (non LINN.) THUNB., Fl. Jap. p. 187 (1784); FR. et SAV.

| | Regions | | | | | |
|---|-------------|-------------------------------|------------|---------|--------------|-------------------------|
| Names of Plants | | | | | | |
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs |
| | Tanegasima | Kyūsuyō Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles |
| | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, | Amur & | Usuri | China |
| <i>Oxalis corniculata</i> , subsp. <i>repens</i> , MASAMUNE | + | + | + | + | + | + |
| <i>O. c. r.</i> var. <i>atropurpurea</i> , MASAMUNE | | | + | | | |
| <i>Oxalis Griffithii</i> , EDGEW. et HOOK. f. | | + | | | | |

HAY., Fl. Mont. Formos. p. 66 (1908), et Ic. Pl. Formos. I. p. 114 (1911); KUNTZ, in ENGL. Pfl.-reich. IV. 130 (Heft. 95) p. 234 (1930)

Syn. *Oxalis japonica*, FR. et SAV., Enum. Pl. Jap. II. p. 308 (1876)

Acetosella Griffithii, (HOOK. f.) O. KUNTZE, Rev. Gen. Pl. I. p. 91 (1891)

Acetosella japonica, (FR. et SAV.) O. KUNTZE, Rev. Gen. Pl. I. p. 91 (1891)

Oxalis Acetosella, LINN. var. *japonica*, MAK., in Tokyo Bot. Mag. XXII. p. 171 (1908); MATSUM., Ind. Pl. Jap. II. 2. p. 285 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 87 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 613 (1931)

Nom. Jap. *Miyama-katabami*

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, China, Himalaya.

Note. The species is found as undergrowth in the lauri-aciculisilvae, from 600 m up to 1700 m above the sea level.

Considering the distribution of the species of the family, the island shows no special relation either to the northern or to the southern floral regions.

Rutaceae

Rutaceae, JUSS., Gen. Pl. p. 296 (1789)

Zanthoxylum, (*Xanthoxylum*) [LINN., Hort. Cliff. p. 487 (1737) et Sp. Pl. ed. 1. p. 270 (1753); ENDL., Gen. Pl. n. 5972 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 297 (1862); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 115 (1896), et 2 auf. B. 19a. p. 214 (1931)

Syn. *Zanthoxylon*, WALTER, Fl. Carol. pp. 52 et 243 (1788)

Xanthoxylum, J. F. GMEL., Syst. II. p. 509 (1791)

Xanthoxylum, SPRENG., Anleit. ed. 2. II. p. 655 (1848)

Zanthoxylon, FR. et SAV., Enum. Pl. Jap. I. p. 72 (1875)

Zanthoxylum planispinum, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 138 (1845); GRAY, in Perry Exped. p. 309 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 22 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 73 (1875); MAXIM., in Mém. Biolog. XII. p. 428 (1886); MATSUM. et HAY., Enum. Pl. Formos. p. 72 (1906); NAK., Fl. Kor. I. p. 116 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 295 (1912); MIURA, List Pl. Manch. & Mong. p. 234 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 632 (1931); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 19a. p. 217 (1931)

Syn. *Zanthoxylum alatum*, (non ROXB.) FORB. et HEMSL., Ind. Fl. Sin. I. p. 105 (1886); SHIRASAWA, Ic. For. Tr. Jap. ed. 2. II. p. 104, Pl. 34 ff. 26-30 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 55 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 122 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 88 (1929)

Zanthoxylum alatum, ROXB. var. *planispinum*, REHDER et WILSON, in SARGENT Pl. Wils. II. p. 125 (1916)

Nom. Jap. *Huyu-zansyô*

Leg. (fid. Z. TASHIRO).

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. In the island the species occurs rarely in the laurisilvae.

Zanthoxylum piperitum, DC., Prodr. I. p. 725 (1824); FORB. et HEMSL., Ind. Fl. Sin. I. p. 107 (1886); MAXIM., in Mém. Biolog. VIII. p. 3 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 72 (1875); KOM., Fl. Mansh. II. p. 667 (1904); NAK., Fl. Kor. I. p. 117 (1909); SHIRASAWA, Ic. Tr. Jap. ed. 2. I. p. 155, pl. 52, ff. 11-25 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 295 (1912); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 19 a. p. 217 (1931); LOESN., Pfl.-Welt. Kiautsch. Geb. p. 146 (1918); CHUN., Cat. Tree. & Shrub. Chin. p. 123 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 87 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 632 (1931)

Nom. Jap. Sansyô

Leg. Kosugidani, Jul. 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, Manchuria, China.

Note. The species is found in the lauri-aciculisilvae about 700 m above the sea level, and it has its southern limit in Amami-Ôsima.

Fagara, LINN., Syst. ed. 10. p. 897 (1759); ENDL.,

Gen. Pl. n. 5972c (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 298 (1862); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 19 a. p. 217 (1931)

Syn. *Fagaras*, [BURM., Thes. Zeyl. (1735)] O. KUNTZE, Rev. Gen. Pl. III. 2. p. 34 (1898)

Fagara ailanthoides, ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 118 (1895), et in 2 auf. B. 19 a. p. 221 (1931); MATSUM., Ind. Pl. Jap. II. 2. p. 291 (1912); MORI, Enum. Pl. Cor. p. 229 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 88 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 625 (1931); LEMÉE, Dict. Gen. Pl. Phan. III. p. 85 (1931)

Syn. *Zanthoxylon ailanthoides*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 138 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 22 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 72 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 105 (1886); MATSUM. et HAY., Enum. Pl. Formos. p. 71 (1906); SHIRAZAWA, Ic. Tree. Jap. ed. 2. I. p. 154, pl. 52, ff. 1-9 (1911)

Zanthoxylon emarginatum, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 22 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 73 (1875)

Nom. Jap. Karasu-zansyô

Leg. Ipse, Jun. 10, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China

Note. The species is found in the lauri-aciculisilvae and in the laurisilvae from the sea level up to about 900 m above, and grows very often in clearings.

Fagara piperita, (non LINN.) THUNB., Fl. Jap. p. 64 (1784)

Syn. *Zanthoxylum schinifolium*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 137 (1845); MAXIM., in Mém. Biolog. VIII. p. 3 (1871); HANCE, in Journ. Bot. p. 296 (1883); FORB. et HEMSL., Ind. Fl. Sin. I. p. 107 (1886); KOM., Fl. Mansh. II. p. 666 (1904)

Zanthoxylum mantschuricum, BENN., in Ann. Nat. Hist. III. 10. p. 200 (1862)

Fagara schinifolia, ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 118 (1895), et 2 auf. B. 19 a. p. 221 (1931); ITO et MATSUM., Tent. Fl. Lutch. I. p. 356 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 292 (1912); LOESEN., Pflanzenwelt Kiautsch. Geb. p. 147 (1918); MAK. et NEM., Fl. Jap. ed. 2. p. 626 (1931)

Zanthoxylum schiifolium, NAK., Fl. Kor. I. p. 116 (1909)

Zanthoxylum shinnifolium, SHIRAZAWA, Ic. Tree. Jap. ed. 2. II. p. 103, pl. 33, ff. 1-15 (1912)

Nom. Jap. *Inu-zansyô*

Leg. Ipse, Jul. 31, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, Manchuria, China.

Note. This is a common species in the Far East, and in the island it grows on waste lands or by the roadside.

Evodia, (*Euodia*) FORST., Char. Gen. p. 13, t. 7 (1776; DC., Prodr. I. p. 724 (1824); ENDL., Gen. Pl. n. 5996 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 296 (1862); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 119 (1896), et 2 auf. B. 19a. p. 225 (1931); LEMÉE, Dict. Gen. Pl. Phan. III. p. 69 (1931)

Syn. *Atitara*, MARGR., ex JUSS. in Dict. Sc. Nat. III. p. 277 1816,

Boymia, JUSS., in Mem. Paris. XII. p. 507 (1825)

Megabotrya, HANCE, in Walp. Ann. II. p. 259 (1851)

Evodia meliaefolia, BENTH., Fl. Hongk. p. 58 (1861); HOOK. f., Fl. Brit. Ind. I. p. 490 (1875; FORB. et HEMSL., Ind. Fl. Sin. I. p. 104 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 354 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 69 (1906); HAY., Fl. Mont. Formos. p. 68 (1908; GUILLAUMINA, in LECOMTE, Fl. Ind. Chin. I. 6. p. 637 (1911); SHIRASAWA, Ic. Tree. Jap. ed. 2. II. p. 108 pl. 34, ff. 1-9 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 55 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 290 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 88 1929)

Syn. *Megabotrya meliaefolia*, HANCE, in Walp. Ann. II. p. 259 (1851)

Boymia glabrifolia, CHAMP., in Hook. Kew. Journ. Bot. III. p. 330 1851; SEEM., Bot. Voy. Herald. p. 370 (1857)

Evodia glauca, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 23 1867; MAK. et NEM., Fl. Jap. ed. 2. p. 624 (1931)

Evodia meliifolia, DIELS, Fl. Cent. Chin. p. 423 1900; ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 19a. p. 228, ff. 96 O-Q. (1931)

Nom. Jap. *Hama-sendan*

Leg. Ipse, Koseda.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, India.

Note. The species is found near the coast or in the laurisilvae at low altitudes and is common in the Far East.

Skimmia, THUNB., Nov. Gen. Pl. III. p. 57 (1783); DC., Prodr. II. p. 18 (1825); ENDL., Gen. Pl. n. 5712 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 302 (1862); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 181 (1896), et 2 auf. B. 19a. p. 312 (1931)

Syn. *Skimmi*, ADANS., Fam. II. p. 364 (1763)

Skimmia japonica, THUNB., Nov. Gen. p. 58 (1783), et Fl. Jap. p. 62 (1784); DC., Prodr. II. p. 18 (1825); A. GRAY, Bot. Jap. p. 398 (1858); FR. et SAV., Enum. Pl. Jap. I. p. 74 (1875), et II. p. 311 (1876); ITO et MATSUM., Tent. Fl. Lutch. I. p. 357 (1899); DIELS, Fl. Cent. Chin. p. 424 (1900); HAY., Fl. Mont. Formos. p. 68 (1908); SHIRASAWA, Ic. For. Tr. Jap. ed. 2. II. p. 107 pl. 34 ff. 10-17 (1912) p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 294 (1912); MERR., Enum. Philipp. Pl. II. p.

| Names of Plants | Regions | | Philippines | | Ryûkyûs | Kytsyû | | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamitchatka | Manchuria, Amur & Usuri | China |
|---|---------|--|-------------|--------|---------|---------|-------------|--------|--------|-------|-------------------------|-----------|--------------------------------|-------------------------|-------|
| | | | Bonins | Taiwan | | Okinawa | Amami-Ôsima | | | | | | | | |
| <i>Zanthoxylum planispinum</i> , SIEB. et ZUCC. . | | | + | + | + | | + | + | + | + | | | + | + | |
| <i>Zanthoxylum piperitum</i> , DC. | | | | | | + | + | + | + | + | + | | + | + | |
| <i>Fagara allanthoides</i> , ENGL. | | | + | + | + | + | + | + | + | + | | | | | + |

| | | | | | | | | | | | | | |
|--|---|----|----|----|----|----|-----------------------|-----|-----|----|----|----|------|
| <i>Fagara piperita</i> , THUNB. | | | | + | + | + | + | + | + | + | | + | + |
| <i>Evodia meliaefolia</i> , BENTH. | | | | + | + | + | + | + | + | + | | | + |
| <i>Skimmia japonica</i> , THUNB. | + | | | + | + | + | | + | + | + | + | | + |
| <i>Citrus Tachibana</i> , TANAKA | | | | + | | + | + | + | + | | | | |
| Total | 7 | 1 | 1 | 5 | 5 | 6 | 6 | 7 | 7 | 6 | 4 | 2 | 3 6 |
| Percentage | | 14 | 14 | 71 | 71 | 86 | 86 | 100 | 100 | 86 | 57 | 29 | 4386 |
| | | | | | | | | | | | | | |
| (Southern elements 7) | | | | | | | (Northern elements 7) | | | | | | |

In respect of this family the island shows no special relationship either with the northern or with the southern districts.

Polygalaceae

Polygalaceae, LINDL., Nat. Syst. ed. 2. p. 84 (1836)

Syn. Polygaleae, JUSS., in Ann. Mus. Paris. XIV. p. 386 (1806); DC., Prodr. I. p. 321 (1824); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 134 (1862)

Polygala, [TOURN., ex LINN. Syst. ed. 1 1735]

et Sp. Pl. ed. 1. p. 701 1753; DC., Prodr. I. p. 321 1824; ENDL., Gen. Pl. n. 5647 1836-40; BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 136, (1862; CHOD., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 330 (1896)

Syn. Polygaloides, TOURN. ex HALL., Enum. Stirp. Helvet. II. p. 607 (1742)

Polygala, NECK, Del. Gall.-belg. II. p. 300 (1768)

Polygala japonica, HOUTT., Handleid. X. p. 89, t. 62, f. 1 (1779); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 260 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 18 (1875); MATSUM. et HAY., Enum. Pl. Formos. p. 34 (1906); HAY., Fl. Mont. Formos. p. 55 (1908); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. p. 255 (1909); MORI, Enum. Pl. Cor. p. 232 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); YAMAZUTA, List Manch. Pl. p. 176 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 639 (1931)

Syn. Polygala sibirica, (non LINN.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 260 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 44 (1875); NAK., Fl. Kor. I. p. 74 (1909)

Nom. Jap. Hime-hagi

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. This is a common species in the Far East, and is often found in open grasslands at low altitudes.

Salomonina, LOUR., Fl. Cochinch. p. 14 (1790);

DC., Prodr. I. p. 333 (1824); ENDL., Gen. Pl. n. 5646 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 136 (1862); CHOD., in ENGL. u. PRANT. Nat. Pfl.-fam. III. iv. p. 342 (1896)

Syn. Salmonea, VAHL., Enum. I. p. 8 (1804)

Salomonina ciliata, DC., Prodr. I. p. 334 (1824); MERR., Enum. Philipp. Pl. II. p. 386 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929)

Syn. *Polygala ciliata*, LINN., Sp. Pl. ed. 1. p. 705 (1753)

Polygala vulgaris, (non LINN.) THUNB., Fl. Jap. p. 277 (1784)

Salomonina oblongifolia, DC., Prodr. I. p. 334 (1824); BENTH., Fl. Hongk. p. 44 (1861); HOOK. f., Fl. Brit. Ind. I. p. 207 (1872); FORB. et HEMSL., Ind. Fl. Sin. I. p. 59 (1886); DUNN & TUTCH., Fl. Kwang. & Hongk. p. 38 (1912); KOIDZ., in Tokyo Bot. Mag. XLIV. p. 107 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 640 (1931)

Salomonina stricta, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 152 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 260 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 45 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 299 (1912); HAY., Ic. Pl. Formos. III. p. 32 (1913)

Nom. Jap. *Hinano-kanzasi*

Leg. Ambô, Aug. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China, Philippines.

Note. The species is found in waste lands or in open grasslands at low altitudes.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|---------|------------|--------------|--------|--------|-------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôshima | Ryûkyûs | Kyûsyû | | | | | |
| | | | | | | | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Polygala japonica</i> , HOUTT. | | + | + | + | + | + | + | + | + | + | + | + |
| <i>Salomonina ciliata</i> , DC. | + | + | + | | | | + | + | + | + | | + |

So far as the distribution of the plants of *Polygalaceae* are concerned the island does not show any special relationship either with the northern or with the southern regions.

Euphorbiaceae

Euphorbiaceae, J. ST. HILL., Expos. Fam. II. p. 276 (1805); BENTH., in BENTH. et HOOK. f. Gen. Pl. III. 1. p. 239 (1880)

Syn. *Euphorbiae*, B. JUSS., in Hort. Trianon (1759), ex JUSS., Gen. p. 384 (1789)

Phyllanthus, [LINN., Gen. ed. 1. p. 282 (1737)]
et Sp. Pl. ed. 1. p. 981 (1753); ENDL., Gen. Pl. n. 5847 (1836-40); MÜLLER, in

DC. Prodr. XV. 2. p. 274 (1862); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 272 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III, v. p. 18 (1890); PAX u. HOFF., in Id. 2 auf. B. 19c. p. 60 (1931)

Syn. *Diasperus*, [LINN., Syst. ed. 1 (1735)] O. KUNTZE, Rev. Gen. Pl. II. p. 596 (1891)

Niruri, ADANS., Fam. II. p. 356 (1763)

Lobocarpus, WIGHT et ARN., Prodr. Fl. Rev. Ind. Or. I. p. 7 (1834)

Phyllanthus flexuosus, MÜLL.-ARG., in DC. Prodr. XV. 2. p. 324 (1862; FORB. et HEMSL., Ind. Fl. Sin. II. p. 421 (1894); DIELS, Fl. Centr. Chin. p. 427 (1900); HAY., Rev. Euphor. & Bux. Jap. p. 12, t. I, G. (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 308 (1912); MAK. et NEM., Cat. Jap. Pl. p. 183 (1914), et Fl. Jap. ed. 2. p. 660 (1931); CHUN., Cat. Tree. & Shrub. Chin. p. 130 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 90 (1929)

Syn. *Cicca flexuosa*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 143 (1845)

Glochidion flexuosum, MÜLL.-AGR., ex MIQ. in Ann. Mus. Bot. Lugd. Bat. III. p. 128 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 426 (1875)

Nom. Jap. *Kobannoki*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, China.

Note. I have not found this species in the island, but Dr. KUDO told me that he had collected it in the island. The species is rather common in South Kyûsyû.

Phyllanthus Matsumurae, HAY., Euphor. & Bux. Jap. p. 11. t. I. E (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 308 (1912); MAK. et NEM., Cat. Jap. Pl. p. 183 (1914), et Fl. Jap. ed. 2. p. 660 (1931); YAMAZUTA, List Manch. Pl. p. 180 (1930)

Syn. *Phyllanthus simplex*, (non RETZ.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 127 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 423 (1875); KOM., Fl. Mansh. II. p. 683 (1904)

Nom. Jap. *Hime-mikansô*

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Manchuria.

Note. The plant is found in waste lands or along the roadside.

Phyllanthus urinaria, LINN., Sp. Pl. ed. 1. p. 982 (1753); LOUR., Fl. Cochinch. p. 554 (1790); WILLD., Sp. Pl. IV. p. 583 (1805); BENTH., Fl. Hongk. p. 310 (1861); MÜLL.-ARG., in DC. Prodr. XV. 2. p. 364 (1862); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 127 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 426 (1875); MAXIM., in Engl. Bot. Jahrb. VI. p. 59 (1885); HOOK. f., Fl. Brit. Ind. V. p. 293 (1887); FORB. et HEMSL., Ind. Fl. Sin. II. p. 423 (1894); HAY., Euphor. & Bux. Jap. p. 8, t. I. C. (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 359 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 309 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 234 (1912); MAK. et NEM., Cat. Jap. Pl. p. 183 (1914), et Fl. Jap. ed. 2. p. 661 (1931); MORI, Enum. Pl. Cor. p. 234 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 90 (1929)

Syn. *Phyllanthus lepidocarpus*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 143 (1845); WIGHT, Ic. Ind. Or. t. 1895 (1852); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 127 (1867)

Nom. Jap. *Komikansô*

Leg. Y. KUDO! Kurio Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. The species is found in waste or cultivated lands near the sea level, and is widely distributed in Asia and tropical regions.

Glochidion, FORST., Char. Gen. p. 113, t. 57 (1876); ENDL., Gen. Pl. n. 5855 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 272 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 23 (1890); PAX u. HOFF., in id. 2 auf. B. 19c. p. 56 (1931); LEMÉE, Dict. Gen. Pl. Phan. III. p. 270 (1931)

Syn. *Bradleja*, BANKS, ex GAERTNER, Fruct. II. p. 127, t. 109 (1791)

Glochisandra, WIGHT, Ic. Ind. Or. V. p. 2, p. 28, t. 1905 (1852)

Glochidion hongkongense, MÜLL.-ARG., in Linnaea XXXII. p. 60 (1863); FORB. et HEMSL., Ind. Fl. Sin. II. p. 424 (1894); HAY., Mat. Fl. Formos. p. 264 (1911); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 235 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 131 (1924); MERR., Enum. Hainan Pl. p. 107 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 655 (1931)

Syn. *Glochidion littorale*, (non BL.) BENTH., Fl. Hongk. p. 314 (1861)

Phyllanthus hongkongensis, MÜLL.-ARG., in Fl. XLVIII. p. 371 (1865); DC., Prodr. XV. 2. p. 282 (1866); HANCE, in Journ. Linn. Soc. XIII. p. 120 (1872)

Glochidion zeylanicum, (non A. JUSS.) HAY., Euphorb. & Bux. Jap. p. 17 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 360 1906; MATSUM., Ind. Pl. Jap. II. 2. p. 306 (1912)

Nom. Jap. *Kakiba-kankonoki*

Leg. Ipse, Nakama, Mart. 22, 1923.

Distr. Amami-Ōsima, Okinawa, Taiwan, China.

Note. The species is found in the lowlands and along small water courses. It has its northern limit in this island.

Glochidion obovatum, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 143 1845; MÜLL.-ARG., in Linn. XXXII. p. 67 1863; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 128 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 426 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 425 (1894); HAY., Euphorb. & Bux. Jap. p. 19, t. II. F. (1904); SHIRASAWA, Ic. For. Tr. Jap. ed. 2. II. p. 114 pl. 36 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 306 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 90 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 656 (1931)

Syn. *Phyllanthus obovatus*, MÜLL.-ARG., in DC. Prodr. XV. 2. p. 307 (1866); CHUN., Cat. Tree. & Shrub. Chin. p. 130 (1924)

Nom. Jap. *Kankonoki*

Leg. Ipse, Jun. 27, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China.

Note. The species is found in somewhat sunny and dry land from the sea level up to about 300 m above, and is common in South Japan.

Antidesma, [BURM., ex LINN. Diss. de Anand. p. 6 (1748), Amoen. Acad. I. p. 249 (1749)] et Sp. Pl. ed. 1. p. 1027 (1753); ENDL., Gen. Pl. n. 1892 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 284 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 30 (1890); PAX u. HOFF., in Id. 2 auf. B. 19c. p. 54 (1931); LEMÉE, Dict. Gen. Pl. Phan. I. p. 313 (1929)

- Syn.* *Bestram*, ADANS., Fam. II. p. 354 (1763)
Stilago, LINN., Mant. I. p. 16 (1767)
Rhytis, LOUR., Fl. Cochinch. p. 660 (1790)

Antidesma japonicum, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 212 (1846); BENTH., Fl. Hongk. p. 318 (1861); MÜLL.-ARG., in DC. Prodr. XV. 2. p. 258 (1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 128 (1868); FR. et SAV., Enum. Pl. Jap. I. p. 427 (1875); MAXIM., in Engl. Bot. Jahrb. VI. p. 59 (1885); FORB. et HEMSL., Ind. Fl. Sin. III. p. 432 (1894); HAY., Euphorb. & Bux. Jap. p. 27, t. II. (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 362 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 300 (1912); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 237 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 133 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 644 (1931)

Nom. Jap. *Yamahihatu*

Leg. Ipse, Ambô, Jun. 7, 1928.

Distr. Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is found in the laurisilvae or on the edges of forest in the lowlands. It is not yet found in lands further north than Yakusima.

Croton, [LINN., Gen. Pl. ed. 1. p. 288 (1737)] et Sp. Pl. ed. 1. p. 1004 (1753); ENDL., Gen. Pl. n. 5872 1836-40; BENTH. et HOOK. f., Gen. Pl. III. 1. p. 293 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 37 (1890); PAX u. HOFF., in Id. 2 auf. B. 19c. p. 83 (1931); LEMÉE, Dict. Gen. Pl. Phan. II. p. 381 (1930)

- Syn.* *Oxydectes*, [LINN., Syst. ed. 1 1735] O. KUNTZE, Rev. Gen. Pl. II. p. 609 1891)
Cascarilla, ADANS., Fam. II. p. 355 1763
Tridesmis, LOUR., Fl. Cochinch. p. 576 1790)

Croton Tigilium, LINN., Sp. Pl. ed. 1. p. 1004 1753; LOUR., Fl. Cochinch. p. 582 (1790); WILLD., Sp. Pl. IV. p. 453 (1805); AITON, Hort. Kew. ed. 2. V. p. 327 (1813); MIQ., Fl. Ind. Bat. I. p. 379 (1858-59); MULL.-ARG., in DC. Prodr. XV. 2. p. 600 (1866); HOOK. f., Fl. Brit. Ind. V. p. 393 1887; FORB. et HEMSL., Ind. Fl. Sin. II. p. 435 (1894); DIELS, Fl. Cent. Chin. p. 428 (1900); HAY., Euphorb. & Bux. Jap. p. 36 t. III. C. (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 363 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 238 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 301 (1912); MERR., Enum. Philipp. Pl. II. p. 427 (1923); RIDLEY, Fl. Malay, III. p. 262 t. III. c. (1924); CHUN., Cat. Tree. & Shrub. Chin. p. 133 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 647 (1931); HANDEL-MAZZ., Symb. Sin. VII. p. 218 (1931)

Nom. Jap. *Hazunoki*

Leg. Ipse, Ambô, Aug. 7, 1928.

Distr. Okinawa, Taiwan, Philippines, Malay, China.

Note. The species is found in the lowlands along forest edges or in bushy places. Even though the species is widely distributed in the island, there is a doubt that it might not have been introduced from other districts.

Mallotus, LOUR., Fl. Cochinch. p. 635 (1790); ENDL., Gen. Pl. n. 5819 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 319 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 53 (1890); PAX u. HOFF., in Id. 2 auf. B. 19c. p. 113 (1931); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 277 (1932)

Syn. Rottlera, ROXB., Pl. Coromandel. II. 36, t. 168 (1798)

Stylanthus, REICHB. f. et ZOLL., in Linnaea XXVIII. p. 312 (1856)

Mallotus japonicus, MÜLL.-ARG., in Linnaea XXXIV. p. 189 (1866), et in DC. Prodr. XV. 2. p. 966 (1866); MAXIM., in Engl. Bot. Jahrb. VI. p. 59 (1885); FORB. et HEMSL., Ind. Fl. Sin. II. p. 440 (1894); HAY., Euphorb. Bux. Jap. p. 44. t. III. I. (1904); SHIRASAWA, Ic. Tree. Jap. ed. 2. I. p. 160 t. 55, ff. 1-15 (1911); NAK., Fl. Kor. II. p. 187 (1911); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 240 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 307 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 90 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 658 (1931); HANDEL-MAZZ., Symb. Sin. VII. p. 213 (1931)

Syn. Croton japonicum, THUNB., Fl. Jap. p. 270 (1784)

Rottlera japonica, SPRENG., HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 270 (1836-40); SIEB. et ZUCC., Fl. Jap. p. 147, t. 79 (1841), et Fl. Jap. Fam. Nat. I. p. 144 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 127 (1867)

Nom. Jap. Akamegasawa

Leg. Ipse, Aug. 5, 1928.

Distr. Honsyū, Sikoku, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in clearings or in waste lands which are comparatively sunny, and is widely distributed in Japan.

Acalypha, [LINN., Coroll. Gen. p. 19 (1737)] et Sp. Pl. ed. 1. p. 1003 (1753); ENDL., Gen. Pl. n. 5787 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 311 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 60 (1890); PAX u. HOFF., in Id. 2. auf. B. 19c. p. 134 (1931); LEMÉE, Dict. Gen. Pl. Phan. I. p. 10 (1929)

Syn. Ricinocarpus, [BURM., Thes. Zeyl. p. 203 (1737)] O. KUNTZE, Rev. Gen. Pl. II. p. 615 (1891)

Cupameni, ADANS., Fam. II. p. 356 (1763)

Controversia, O. KUNTZE, Rev. Gen. Pl. III. 2. p. 291 (1898)

Acalypha australis, LINN., Sp. Pl. ed. 1. p. 1004 (1753); FORB. et HEMSL., Ind. Fl. Sin. II. p. 437 (1894); DIELS, Fl. Centr. Chin. p. 429 (1900); HAY., Euphorb. & Bux. Jap. p. 50 t. IV. D. (1904); KOM., Fl. Mansh. II. p. 684 (1904); NAK., Fl. Kor. II. p. 187 (1911); MERR., Enum. Philipp. Pl. II. p. 445 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929)

Syn. Acalypha virgata, THUNB., Fl. Jap. p. 268 (1784)

Urtica gemina, LOUR., Fl. Cochinch. p. 558 (1790)

Acalypha gemina, SPRENG., Syst. Veg. III. p. 880 (1826); MÜLL.-ARG., in DC. Prodr. XV. 2. p. 866 (1866)

Acalypha chinensis, ROXB., Fl. Ind. III. p. 677 (1832); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 213 (1836)

Acalypha pauciflora, HORNEB.; MAXIM., Prim. Fl. Amur. p. 240 (1859); REGEL., Tent. Fl. Uss. no. 429 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 127 (1868); FR. et SAV., Enum. Pl. Jap. I. p. 424 (1875); FR., Pl. David. I. p. 264 (1884)

Acalypha australis, LINN. var. *genuina*, NAK., in Tokyo Bot. Mag. XLIII. p. 442 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 642 (1931)

Nom. Jap. Enokigusa

Leg. Ipse, Ambō, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. This is a common species in the Far East and in the island it is found in waste lands and in cultivated lands near the sea level.

Aleurites, FORST., Char. Gen. p. III. t. 56 (1776);

ENDL., Gen. Pl. n. 5802 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 292 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 72 (1890); PAX u. HOFF., in Id. 2. auf. B. 19 c. p. 99 (1931); LEMÉE, Dict. Gen. Pl. Phan. I. p. 146 (1929)

Aleurites cordata, R. BR., ex STEUD., Nom. ed. 2. I. p. 49 (1840); MULL.-ARG., in DC. Prodr. XV. 2. p. 724 (1866); FORB. et HEMSL., Ind. Fl. Sin. II. p. 433 (1894); DIELS, Fl. Centr. Chin. p. 430 (1900); SHIRASAWA, Ic. For. Tree. Jap. ed. 2. I. p. 162, t. 56, ff. 1-19 (1911); HAY., Rev. Euphorb. & Bux. Jap. p. 55 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 366 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 300 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 134 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 644 (1931)

Syn. *Dryandra cordata*, THUNB., Fl. Jap. p. 267, t. 27 (1784)

Dryandra oleifera, LAM., Encycl. II. p. 329 (1786)

Vernicia montana, LOUR., Fl. Cochinch. ed. 2. p. 587 (1793)

Elaeococca verrucosa, JUSS., Euphorb. Tent. p. 38, t. 11 (1824); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 145 (1845)

Elaeococca cordata, BL., Bijdr. p. 618 (1825-26); FR. et SAV., Enum. Pl. Jap. I. p. 425 (1875)

Aleurites japonica, BL., ex MIQ. in Ann. Mus. Bot. Lugd. Bat. IV. p. 120 (1868)

Aleurites verniciflua, BAILL. Hist. Pl. V. p. 116 (1874)

Nom. Jap. *Aburagiri*

Leg. Ipse, Kosugidani, Jun. 6, 1928.

Distr. Honsyû, Kyûsyû, Taiwan, China.

Note. The plant is found in clearings in the lauri-aciculisilvae or in the lauri-silvae.

Sapium, P. BR., Hist. Jam. p. 338 (1756); JACQ.,

Select. Stirp. Amer. Hist. p. 249 (1763); ADANS., Fam. II. p. 357 (1763); ENDL., Gen. Pl. n. 5780 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 334 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 97 (1890); PAX u. HOFFM. in Id. 2. auf. B. 19 c. n. 198 (1931)

Syn. *Gymnobotrys*, WALL., ex BAILL. Etud. Gén. Euphorb. p. 526 (1858)

Excaecaria, MULL.-ARG., in DC. Prodr. XV. 2. p. 1201 (1866)

Sapium japonicum, SIEB. et ZUCC.; PAX et K., in ENGL. Pfl.-reich. IV. 147 (Hert 52) p. 252 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 135 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 90 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 662 (1931); HADEL-MAZZ., Symb. Sin. VII. p. 123 (1931)

Syn. *Croton Siraki*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 144 (1845) nomen.

Stillingia japonica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 145 (1846)

Triadica japonica, BAILL., Etud. Gen. Euphorb. p. 512 (1858)

Excoecaria japonica, MULL.-ARG., in Linn. XXXII. p. 123 (1863), et in DC. Prodr. XV. 2. p. 1218 (1866); FORB. et HEMSL., Ind. Fl. Sin. II. p. 446 (1894); HAY., Euphorb. & Bux. Jap. p. 59. t. IV. (1904); NAK. Fl. Kor.

II. p. 187 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 305 (1912); SHIRASAWA, Ic. Tr. Jap. ed. 2. II. p. 113, t. 36, ff. 1-13 (1912)

Nom. Jap. *Siraki*

Leg. Ipse, Kosugidani, Jul. 7, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, China.

Note. The plant is found from the sea level up to 800 m above, but on rather rare occasions in this island.

Euphorbia, [LINN., Gen. Pl. ed. 1. p. 152 (1737)]

et Sp. Pl. ed. 1. p. 450 (1753); ENDL., Gen. Pl. n. 5766 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 258 (1880); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 103 (1890); PAX u. HOFF., in Id. 2. auf. B. 19c. p. 208 (1931); LEMÉE, Dict. Gen. Pl. Phan. III. p. 44 (1931)

Syn. *Characias*, S. F. GRAY, Nat. Arr. Brit. Pl. II. p. 269 (1821)

Keraselma, NECK., Elem. II. p. 353 (1790); RAF., Fl. Tellur. IV. p. 116 (1836)

Euphorbia Atoto, FORST f., Prodr. p. 36 (1786); BOISS., in DC. Prodr. XV. 2. p. 12 (1866); MAXIM., in Mél. Biolog. XI. p. 831 (1883); HOOK. f., Fl. Brit. Ind. V. p. 248 (1887); FORB. et HEMSL., Ind. Fl. Sin. II. p. 411 (1894); HENRY, List Pl. Formos. p. 81 (1896); MATSUM. et HAY., Enum. Pl. Formos. p. 366 (1906); HAY., Mat. Fl. Formos. p. 261 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 233 (1912); MERR., Enum. Philipp. Pl. II. p. 461 (1923), et Enum. Hainan Pl. p. 113 (1927); RIDLEY, Fl. Malay, III. p. 181 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 649 (1931)

Nom. Jap. *Hamadaigeki*

Leg. Ipse, Issô, Aug. 19, 1928.

Distr. Amami-Ôsima, Okinawa, Taiwan, China, Philippines.

Note. This psammophyte is found near the seashore, and has its northern limit in the island.

Euphorbia humifusa, WILLD., Enum. Hort. Berol. Supp. p. 27 (1813); LEDEB., Fl. Ross. III. p. 557 (1846-51); BOISS., in DC. Prodr. XV. 2. p. 30 (1862); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 125 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 420 (1875); FR., Pl. David. I. p. 262 (1884); MAXIM., in Mél. Biolog. XI. p. 832 (1883); FORB. et HEMSL., Ind. Fl. Sin. II. p. 414 (1894); HAY., Euphorb. & Bux. Jap. p. 78 t. G. (1904); KOM., Fl. Mansh. II. p. 685 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 368 (1906); NAK., Fl. Kor. II. p. 184 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 650 (1931)

Syn. *Euphorbia thymifolia*, THUNB., Fl. Jap. p. 196 (1784)

Euphorbia chamaesyce, C. A. MEY., in LEDEB., Fl. Alt. IV. p. 195 (1893)

Nom. Jap. *Nisiki-sô*

Leg. Y. KUDO! inter Miyanoura et Yaegadake, Aug. 1907.

Distr. Honsyû, Sikoku, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Grows in open sunny ground near the sea level.

Euphorbiaceae plants are plentiful in tropical and subtropical regions; it is natural therefore that representatives of this family should be plentiful in Formosa and gradually diminish going from

| Names or Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|-----------------------|--------------|--------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Phyllanthus flexuosus</i> , MULL.-ARG. | | | | + | + | | | + | + | + | | |
| <i>Phyllanthus Matumurae</i> , HAY. | | | | + | | | | + | + | + | | |
| <i>Phyllanthus urinaria</i> , LINN. | + | | + | + | + | + | + | + | + | + | + | |
| <i>Glochidion hongkongense</i> , MULL.-ARG. . . . | | | + | + | + | | | | | | | |
| <i>Glochidion obovatum</i> , SIEB. et ZUCC. . . . | | | + | + | + | + | + | + | + | + | | |
| <i>Antidesma japonicum</i> , SIEB. et ZUCC. . . . | | | + | + | + | | | | | | | |
| <i>Croton Tiglium</i> , LINN. | + | | + | + | | | | | | | | |
| <i>Mallotus japonicus</i> , MULL.-ARG. | | | + | + | + | + | | | + | + | + | |
| <i>Acalypha australis</i> , LINN. | + | | + | + | + | + | + | + | + | + | + | |
| <i>Aleurites cordata</i> , R. BR. | | | + | | | | | + | | + | | |
| <i>Sapium japonicum</i> , SIEB. et ZUCC. | | | | + | + | | | + | + | + | + | |
| <i>Euphorbia Atoto</i> , FORST, f. | + | | + | + | + | | | | | | | |
| <i>Euphorbia humifusa</i> , WILLD. | | | + | + | + | | | + | + | + | + | |
| Total | 13 | 4 | 10 | 12 | 10 | 4 | 8 | 8 | 9 | 5 | | |
| Percentage | 31 | 77 | 92 | 77 | 31 | 62 | 62 | 69 | 38 | | | |
| (Southern elements 13) | | | | | | (Northern elements 9) | | | | | | |

south to north. Yakusima is situated in the place where the diminution begins and has a few representatives which have their northern limit in this island.

Daphniphyllaceae

Daphniphyllaceae, MULL.-ARG., in DC. Prodr. XVI. 1. p. 1 (1869); PAX u. HOFF., in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. 19 c. p. 233 (1931)

Daphniphyllum, BL., Bijdr. p. 1152 (1825); ENDL., Gen. Pl. n. 5755 (1836-40); MIQ., Fl. Ind. Bat. I. 2. p. 431 (1859); BENTH., Fl. Hongk. p. 316 (1861); MÜLL.-ARG., in DC. Prodr. XVI. 1. p. 1 (1869); BENTH. et HOOK. f., Gen. Pl. III. 1. p. 282 (1880); HOOK. f., Fl. Brit. Ind. V. p. 353 (1885); HAY., Euphorb. et Bux. p. 31 (1904); LEMÉE, Dict. Gen. Pl. Phan. II. p. 502 (1930); ROSENTHAL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 19c. p. 234 (1931)

Syn. *Goughia*, WIGHT, Ic. V. p. 22, tt. 1878, 1879 (1852)

Daphniphyllum glaucescens, BL., in Mus. Bot. I. t. 11. f. 72 (1849-51); MÜELL.-ARG., in DC. Prodr. XVI. 1. p. 3 (1869); FR. et SAV., Enum. Pl. Jap. I. p. 427 (1875), et II. p. 488 (1876); MAXIM., in ENGL. Bot. Jahrb. VI. p. 59 (1885); HOOK. f., Fl. Brit. Ind. I. p. 353 (1887); FORB. et HEMSL., Ind. Fl. Sin. II. p. 429 (1894); DIELS, Fl. Cent. Chin. p. 428 (1900); PALIB., Consp. Fl. Kor. II. p. 43 (1900); HAY., Rev. Euphorb. & Bux. Jap. p. 33, t. II. K. (1904); NAK., Fl. Kor. II. p. 182 (1911); SHIRASAWA, Ic. For. Tree. Jap. ed. 2. II. p. 116, t. 37, ff. 14-22 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 236 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 301 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 132 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 647 (1931)

Syn. *Goughia neilgherrensis*, WIGHT, Ic. Pl. Ind. Or. tt. 1878-79 (1852)

Daphniphyllum Roxburghii, BAILL., Etud. Gén. Euphorb. p. 565 (1858); BENTH., Fl. Hongk. p. 316 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 128 (1868)

Nom. Jap. *Hime-yuzuriha*

Leg. Ipse, Jul. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found in the laurisilvae, especially near the sea level.

Daphniphyllum macropodium, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 129 (1867); MÜLL.-ARG., in DC. Prodr. XVI. 1. p. 5 (1869); FR. et SAV., Enum. Pl. Jap. I. p. 427 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 429 (1894); HAY., Rev. Euphorb. & Bux. Jap. p. 32, t. II. J. (1904); SHIRASAWA, Ic. For. Tr. Jap. ed. 2. I. p. 158 t. 54, ff. 1-14 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 302 (1912); MORI, Enum. Pl. Cor. p. 233 (1922); CHUN., Cat. Tree. & Shrub. Chin. p. 132 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 89 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 648 (1931); HANDEL-MAGZ., Symb. Sin. VII. p. 234 (1931)

Nom. Jap. *Yuzuriha*

Leg. Ipse, Kosugidani, Sept. 19, 1928.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. I found this species from the sea level up to about 1500 m.

var. *viridipes*, NAK., in Tokyo Bot. Mag. XXXVI. pp. 63, 105 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 648 (1931)

Nom. Jap. *Aoziku-yuzuriha*

Leg. Ipse, ca. Ambô, 1928.

Distr. Hatizyôzima.

Note. Grows in the laurisilvae about 400 m above the sea level, but is not very common in Yakusima.

Nom. Jap. *Kotuge*

Leg. Ipse, Yaegadake, Jun. 12, 1928.

Distr. Sikoku.

Note. The shrub is rather frequently found from 1500 m up to 1800 m above the sea level, and is not yet reported further south than this island.

As *Buxus microphylla*, var. *riparia* which is indigenous to the island is found also in Sikoku, it appears that Yakusima has some relation to the northern floral regions if one takes only this family into consideration.

Anacardiaceae

Anacardiaceae, LINDL., Nat. Syst. ed. 2. p. 166 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 415 (1860)

Rhus, [TOURN., ex. LINN. Gen. Pl. ed. 1. p. 84 (1737)] et Sp. Pl. ed. 1. p. 265 (1753); DC., Prodr. II. p. 66 (1825); ENDL., Gen. Pl. n. 5905 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 413 (1862); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 167 (1892)

Syn. *Toxicodendron*, (TOURN.) LINN., Syst. ed. 1 (1735)

Vernix, ADANS., Fam. II. p. 342 (1763)

Rhus semialata, MURR. var. *Osbeckii*, DC., Prodr. II. p. 67 (1825); ENGL., in DC. Monogr. Phan. IV. p. 380 (1883); NAK., Fl. Kor. I. p. 139 (1909); SHIRASAWA, Ic. For. Tr. Jap. ed. 2, I. p. 167 Pl. 58, ff. 18-34 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 313 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 90 (1929)

Syn. *Rhus javanica*, LINN., Sp. Pl. ed. 1. p. 265 (1753); MORI, Enum. Pl. Cor. p. 235 (1922); YAMAZUTA, List Manch. Pl. p. 181 (1930); MAK. et NEM., Fl., Jap. ed. 2. p. 667 (1931) p. p.

Rhus Osbeckii, KOCH, Dendr. I. p. 578 (1869); DIPPEL, Handb. Laubholz. II. p. 372, f. 172 a, et b. (1892)

Rhus alata, var. *Osbeckii*, FR. et SAV., Enum. Pl. Jap. I. p. 92 (1875)

Rhus semialata, FORB. et HEMSL., Ind. Fl. Sin. I. p. 146 (1886) p. p.

Nom. Jap. *Husinoki*

Leg. Ipse, Jul. 20, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, Manchuria.

Note. The species is widely distributed in Eastern Asia. It is found in the lauri-silvae or in the lower part of the lauri-aciculisilvae, especially in somewhat sunny places.

Rhus succedanea, LINN. var. *japonica*, ENGL., in DC. Monogr. IV. p. 399 (1883); IRO et MATSUM., Tent. Fl. Lutch. I. p. 392 (1899); MORI, Enum. Pl. Cor. p. 236 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 91 (1929)

Syn. *Rhus succedanea*, (non LINN.) THUNB., Fl. Jap. p. 122 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 84 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 92 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 147 (1886) p. p.; MATSUM. et HAY., Enum. Pl. Formos. p. 101 (1906); SHIRASAWA, Ic. Tree. Jap. ed.

related to the northern districts (Kyûsyû, Sikoku, Honsyû, Yezo, and Korea). Considering this fact we must admit that the sea which lies between Yakusima and Amami-Ôsima seems to be the line of demarkation between the floral regions so far as this family alone is concerned.

Aquifoliaceae

Aquifoliaceae, DC., Théor. Elém. p. 217 (1813), et Prodr. II. p. 11 (1825); LOESN., Monogr. Aquif. p. 5 (1901)

Ilex, [TOURN., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 125 (1753); LAM., Encycl. III. p. 145 (1789) p. p.; DC., Prodr. II. p. 13 (1825); ENDL., Gen. Pl. n. 5705 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 356 (1862); BAILL., Hist. Pl. XI. p. 213 (1895); LOES., in ENGL. u. PRANT. Nat. Pfl.-fam. Nachtr. p. 198 (1900), et Monogr. Aquif. I. p. 8 (1901); LEMÉE, Dict. Gen. Pl. Phan. III. p. 743 (1931)

Syn. *Ageria*, ADANS., Fam. II. p. 166 (1763)

Macoucona, AUBL., Hist. Pl. Gui. Franc. I. p. 88, t. 34 (1775)

Othera, THUNB., Nov. Gen. Pl. p. 56 (1783)

Hexadica, LOUR., Fl. Cochinch. p. 562 (1790)

Leucodermis, PL., ex BENTH. et HOOK. f. Gen. Pl. I. 1. p. 357 (1862)

Ilex Hanceana, MAX., in Mém. Acad. Imp. St. Petr. 7. ser. XXIX. p. 33 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 116 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 367 (1899); LOESN., Monogr. Aquifol. I. p. 203 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 315 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 59 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 140 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 91 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 671 (1931)

Syn. *Ilex buxifolia*, HANCE, in Journ. Bot. p. 364 (1876) ?

Nom. Jap. *Tugemoti*

Leg. Ipse, Jul. 2, 1928.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The tree is found in the laurisilvae from the sea level up to almost 800 m and is distributed in South Japan.

Ilex integra, THUNB., Fl. Jap. p. 77 (1784); WILLD., Sp. Pl. I. 2. p. 711 (1797); ROEM. et SCHULT., Syst. Veg. III. p. 492 (1818); BL., Bijdr. p. 1149 (1825); DC., Prodr. II. p. 16 (1825); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 148 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 105 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 77 (1875); MAXIM., in Mém. Acad. Sc. Peter. 7. ser. XXXIX. p. 41 (1881); FORB. et HESML., Ind. Fl. Sin. I. p. 116 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 368 (1899); LOESN., Monogr. Aquif. I. pp. 51, 270 (1901); MATSUM. et HAY., Enum. Pl. Formos. p. 82 (1906); SHIRASAWA, Ic. Tree. Jap. I. p. 172 Pl. 60. ff. 18-34 (1911); MORI, Enum. Pl. Cor. p. 236 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 91 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 671 (1931)

Syn. *Othera japonica*, THUNB., Fl. Jap. p. 61 (1784), et Ic. Pl. Jap. Decas. 2. t. 3 (1800); WILLD., Sp. Pl. J. p. 671 (1797); LAM., Encycl. Meth. IV. p. 663

(1797); PERS., Syn. Pl. I. p. 145 (1805); ROEM. et SCHULT., Syst. Veg. III. p. 300 (1818)

Ilex otherea, SPRENG., Syst. Veg. I. p. 496 (1825); MAK., in Tokyo Bot. Mag. XXI. p. 63 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 316 (1912)

Nom. Jap. *Motinoki*

Leg. Ipse, Hara, Aug. 1927.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China.

Note. The plant is frequently found in the laurisilvae near the sea level. It is common in the southern part of Japan.

Ilex Mutchagara, MAK., in Tokyo Bot. Mag. XXVII. p. 75, f. 2a. 1913; MASAMUNE, Prel. Rep. Veg. Yak. p. 91 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 674 (1931)

Nom. Jap. *Mutyagara*

Leg. Ipse, Ambô, Jul. 2, 1928.

Distr. Amami-Ôsima, Okinawa.

Note. The species is found in somewhat wet, open places. Even though it is reported to be indigenous to Formosa, I rather doubt it and I think the occurrence of the species is restricted only to the Ryûkyû archipelago.

Ilex pedunculosa, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 106 (1867), et in Versl. Med. Akad. Wetensch. Ser. 2. II. p. 83 (1868); FR. et SAV., Enum. Pl. Jap. I. p. 77 (1875); MAXIM., in Mem. Acad. Sc. Petersb. 7e ser. XXIX. p. 37 (1881); LOESN., Monogr. I. pp. 30, et 108 (1901); SHIRASAWA, Ic. Tree. Jap. ed. 2. I. p. 174, Pl. 61. ff. 1-10 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 317 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 91 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 674 (1931)

Syn. *Ilex Morii*, YAMAMOTO, Supp. Ic. Pl. Formos. I. p. 38 (1925)

Nom. Jap. *Soyogo*

Leg. Ipse, ca. 1200 m. Aug. 30, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan.

Note. The species is frequently found in the lauri-aciculisilvae.

Ilex rotunda, THUNB., Fl. Jap. p. 77 (1784); WILLD., Sp. Pl. I. 2. p. 711 (1797); ROEM. et SCHULT., Syst. Veg. III. p. 492 (1818); BL., Bijdr. p. 150 (1825); DC., Prodr. II. p. 16 (1825); SPRENG., Syst. I. p. 496 (1825); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 149 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 106 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 77 (1875); MAXIM., in Mem. Acad. Sc. Petersb. 7e ser. XXIX. p. 36 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 118 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 368 (1899); LOESN., Monogr. I. p. 106 (1901); MATSUM. et HAY., Enum. Pl. Formos. p. 82 (1906); SHIRASAWA, Ic. Tree. Jap. I. p. 173, Pl. 60. ff. 1-17 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 317 (1912); MORI, Enum. Pl. Cor. p. 237 (1922); CHUN., Cat. Tree. & Shrub. Chin. p. 141 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 91 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 675 (1931)

Syn. *Ilex microcarpa*, LINDL., in Paxt. Flow. Garden I. p. 43, f. 28 (1851); KOCH, Dendr. II. 1. p. 220 (1869) *excl. syn.*

Ilex laevigata, BL., in MIQ. Cat. Mus. Bot. Lugd. Bat. p. 167 (1870)

Ilex rotunda, THUNB. var. *genuina*, LOESN., Monogr. Aquif. I. p. 107 (1901)

Nom. Jap. *Kuroganemoti*

Leg. Ipse, Sept. 4, 1926.

Dist. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is rather widely distributed in the southern part of Japan, and in the island it is rarely found in the laurisilvae and in the lower part of the lauricaculisilvae.

| Names of Plants | Regions | | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|-----------------------|--------------|--------|--------|--------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea |
| | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | China |
| <i>Ilex Hanceana</i> , MAXIM. | | + | | + | + | + | + | + | + | | |
| <i>Ilex integra</i> , THUNB. | | + | + | + | + | + | + | + | + | + | |
| <i>Ilex Mutchagara</i> , MAK. | | | | + | + | | | | | | |
| <i>Ilex pedunculosa</i> , MIQ. | | | + | | | | + | + | + | | |
| <i>Ilex rotunda</i> , THUNB. | | + | | + | + | + | + | + | + | + | |
| Total | 5 | 1 | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 2 | |
| Percentage | | 20 | 80 | 80 | 80 | 60 | 80 | 80 | 60 | 40 | |
| (Southern elements 5) | | | | | | (Northern elements 4) | | | | | |

From a study of the above table it will appear that the island has a close relationship with the southern floral regions as regards *Aquifoliaceae*, since *Ilex Mutchagara* has its northern limit in this island.

Celastraceae

Celastraceae, LINDL., Nat. Syst. ed. 2. p. 119 (1836); LOES., in ENGL. u. Prant. Nat. Pfl.-fam. III. v. p. 189 (1892)

Euonymus, (*Evonymus*) [TOURN., ex LINN. Gen. Pl. ed. 1. p. 29 (1737)] et Sp. Pl. ed. 1. p. 197 (1753); DC., Prodr. II. p. 3. (1825); ENDL., Gen. Pl. n. 5676 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 360 (1862); LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 199 (1892); LEMÉE, Dict. Gen. Pl. Phan. III. p. 71 (1931)

Syn. *Evonimus*, NECK., in Act. Acad. Theod.-Palat. II. p. 490 (1770)

Euonymus japonicus, THUNB., Fl. Jap. p. 100 (1784); DC., Prodr. II. p. 4 (1825); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 261, t. 54 (1836-40); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 151 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 85 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 79 (1875); MAXIM., in Mém. Biolog. XI. p. 178 (1881); ITO et MATSUM., Tent. Fl. Lutch. I. p. 370 (1899); NAK., Fl. Kor. I. p. 123 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 321 (1912); SHIRASAWA, Ic. Tree. Jap. II. p. 123, Pl. XXXIX. ff. 13-22 (1912); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 61 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 143 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 681 (1931)

Nom. Jap. *Masaki*

Leg. Ipse, Jul. 12, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Bonins, Korea, China.

Note. The species is widely distributed in the floral regions of eastern Asia. It is found in the littoral forests of the island.

Euonymus Sieboldianus, BL., Bijdr. p. 1147 (1826); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 151 (1845); FR. et SAV., Enum. Pl. Jap. I. p. 79 (1875), et II. p. 312 (1876); MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 683 (1931)

Syn. *Euonymus europaeus*, non LINN.) THUNB., Fl. Jap. p. 101 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 86 (1865)

Euonymus Majumi, SIEB., Synop. Pl. Oecon. Jap. p. 49 (1827)

Euonymus Hamiltoniana, WALL.; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 199 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 78 (1875); KOM., Fl. Mansh. II. p. 708 (1904); MIY. et MIYAKE, Fl. Saghal. p. 92 (1915)

Euonymus Vidalii, FR. et SAV., Enum. Pl. Jap. II. p. 312 (1876)

Euonymus europaea, LINN. var. *Hamiltoniana*, MAXIM., in Mém. Biolog. XI. p. 191 (1881); NAK., Fl. Kor. I. p. 122 (1909); SHIRASAWA, Ic. Tree. Jap. ed. 2. II. p. 122, Pl. XXXIX. ff. 1-10 (1912)

Nom. Jap. *Mayumi*

Leg. Ipse, Jul. 8, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The species grows in the laurisilvae and in the lower part of the lauriculilvae and has its southern limit in the island.

Euonymus yakushimensis, MAK., in Tokyo Bot. Mag. XXIII. p. 248 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 684 (1931)

Nom. Jap. *Ao-turibana*

Leg. Ipse, Kosugidani, Jun. 19, 1928.

Distr. Endemica.

Note. The species grows as an epiphyte or as a terrestrial shrub in the laurisilvae from 600 m up to 1600 m above the sea level.

Microtropis, WALL., Cat. pp. 152 et 250 (1829), ex MEISSN., Gen. p. 68 (1837); ENDL., Gen. Pl. n. 5681 (1836-40); HOOK., in BENTH.

et HOOK. f. Gen. Pl. I. 1. p. 361 (1862); LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 202 (1892); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 474 (1932)

Syn. *Otherodendron*, MAK., in Tokyo Bot. Mag. XXIII. p. 60 (1909)

Microtropis japonica, (FR. et SAV.), HALLIER, Meded. Herb. Leid. 1910 p. 33 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929)

Syn. *Elaeodendron japonicum*, FR. et SAV., Enum. Pl. Jap. II. p. 315 (1876); MAXIM., in Mél. Biolog. XI. p. 205 (1881); ITO et MATSUM., Tent. Fl. Lutch. I. p. 374 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 84 (1906)

Cassine japonica, KUNTZE, Rev. Gen. Pl. I. p. 114 (1891); LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 215 (1892); MATSUM., in Tokyo Bot. Mag. XII. p. 62 (1898)

Otherodendron japonicum, MAK., in Tokyo Bot. Mag. XXIII. p. 62, f. 1 (1909), et Ic. Fl. Jap. I. 4. p. 25. Pl. XII, XIII, XIV (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 323 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 686 (1931)

Nom. Jap. *Mokureisi*

Leg. Ipse, Jul. 2, 1928.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. The species occurs on rare occasions in the laurisilvae. It is not very common but is found rather widely in southern Japan.

Celastrus, [LINN., Gen. Pl. ed. 1. p. 59 (1737)] et Sp. Pl. ed. 1. p. 196 (1753); DC., Prodr. II. p. 5 (1825); ENDL., Gen. Pl. n. 5679 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 364 (1862); LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 205 (1892); LEMÉE, Dict. Gen. Pl. Phan. II. p. 5 (1930)

Syn. *Oriza*, THUNB., Nov. Gen. Pl. p. 56 (1783), et Fl. Jap. p. 3 (1784)

Celastrus articulatus, THUNB. var. **punctatus**, MAK., in Tokyo Bot. Mag. XXI. p. 138 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 319 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 678 (1931)

Syn. *Celastrus punctatus*, THUNB., Fl. Jap. p. 97 (1784), in Trans. Linn. Soc. II. p. 332 (1800); ROEM. et SCHULT., Syst. Veg. V. p. 419 (1819) p.p.; BL., Bijdr. p. 1145 (1825); SPRENG., Syst. Veg. I. p. 775 (1825)

Celastrus kiusianus, FR. et SAV., Enum. Pl. Jap. II. p. 314 (1876)

Nom. Jap. *Teriha-turu-umenodoki*

Leg. Ipse, Onoaida, Mart. 23, 1927.

Distr. Honsyû, Sikoku, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species grows on waste lands near the sea level, and is a common species in the south eastern part of Japan. I think that *C. articulatus* reported in China may be one and the same of this variety.

Tripterygium, HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 368 (1862); LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 213 (1892)

Tripterygium Regelii, var. **Doianum**. (OHWI) nom. nov.

Syn. *Tripterygium Regelii*, (non SPRANGUE et TAKEDA) MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 686 (1931)

Tripterygium Doianum, OHWI, in Act. Pht. Geogr. Bot. I. p. 140 (1932)

Nom. Jap. *Kobano-kurozuru*

Leg. Ipse, Aug. 1, 1924.

Distr. Kyûsyû.

Note. The species grows on somewhat sunny ground.

| Names of Plants | Regions | | | | | | | | | | |
|--|----------------------|--------|--------|---------|-------------|----------------------|--------------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Ryûkyûs | | Kyûsyû | | | | | |
| | | | | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | China |
| <i>Euonymus japonicus</i> , THUNB. | + | | + | + | | + | + | + | + | + | |
| <i>Euonymus Sieboldianus</i> , BL. | | | | | | | + | + | + | + | + |
| <i>Euonymus yakushimensis</i> , MAK. | | | | | | | | | | | |
| <i>Microtropis japonica</i> , HALLIER | | | + | + | + | + | + | | + | | |
| <i>Celastrus articulatus</i> , THUNB. var. <i>punctatus</i> , MAK. | | | | + | + | + | | + | + | | |
| <i>Tripterygium Regelii</i> , var. <i>Doianum</i> . (OHWI) | | | | | | | + | | | | |
| Total 6 | 1 | 1 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 2 | 1 |
| Percentage | 17 | 17 | 50 | 50 | 50 | 67 | 50 | 67 | 34 | 34 | 17 |
| | (Southern elements 3 | | | | | (Northern elements 5 | | | | | |

From the above table it appears clearly that the island is more or less related to the northern floral districts and should be included in the floral region of Kyûsyû and other northern regions.

Staphyleaceae

Staphyleaceae, DC., Prodr. II. p. 2 (1825)

Turpinia, VENT., Choix, p. 31, t. 31 (1803 ; ENDL., Gen. Pl. n. 5671 (1836-40) ; BENTH. et HOOK. f., Gen. Pl. I. 1. p. 413 (1862 ; PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 261 (1893

Syn. *Dalrympelea*, ROXB., Hort. Beng. p. 17 (1814)

Turpinia ternata, NAK., in Journ. Arnold. Arb. V. p. 78 (1924) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 688 (1931)

Syn. *Turpinia pomifera*, (non DC.) MAXIM., in Mél. Biog. XII. p. 435 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 390 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 324 (1912) excl. Pl. ex. Formosa.

Nom. Jap. *Syôben-no-ki*

Leg. Ipse, Kusugawa, Jul. 12, 1928.

Distr. Kyûsyû, Amami-Ôsima, Okinawa.

Note. The species is found on rather rare occasion in the laurisilvae or in the lauri-aciculilvae from the sea level up to about 400 m.

Euscaphis, SIEB. et ZUCC., Fl. Jap. I. p. 124, t. 67 (1835); ENDL., Gen. Pl. n. 5672 (1840); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 412 (1862); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 262 (1893); LEMÉE, Dict. Gen. Pl. Phan. III. p. 58 (1931)

Euscaphis japonica, DIPP., Handb. Laubholz. II. p. 480, f. 229 (1892); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 262, f. 144 (1893); ITO et MATSUM., Tent. Fl. Lutch. I. p. 389. (1899); DIELS, Fl. Cent. Chin. p. 448 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 97 (1906); NAK., Fl. Kor. I. p. 137 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 323 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 147 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 92 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 687 (1931)

Syn. *Sambucus japonica*, THUNB., Fl. Jap. p. 125 (1784).

Euscaphis staphyleoides, SIEB. et ZUCC., Fl. Jap. I. p. 124 t. 67 (1840); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 92 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 91 (1875); FR., Pl. David. I. p. 78 (1884); FORB. et HEMSLL., Ind. Fl. Sin. I. p. 143 (1886)

Nom. Jap. *Gonzui*

Leg. Ipse, Kosugidani, ca. 600 m. Sept. 1, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. It is found in the laurisilvae or in the lauri-aiculilvae from the sea level up to 800 m above. It is widely distributed in eastern Asia.

| Names of Plants | Regions | | | | | | | | | | |
|---|-----------------------|--------|---------|-------------|------------|--------------|--------|--------|--------|-------|-------|
| | Philippines Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | China |
| <i>Turpinia ternata</i> , NAK. | | | + | + | | + | | | | | |
| <i>Euscaphis japonica</i> , DIPP. | | + | + | + | + | + | | + | + | | + |

In this family the island shows no special affinity either with the northern or with the southern floral regions.

Aceraceae

Aceraceae, J. ST. HIL., Expos. Fam. II. p. 15 (1805) p.p.; LINDL., Nat. Syst. ed. 2. p. 81 (1836)

Acer, [TOURN., ex LINN. Syst. ed. 1 1735] et Sp. Pl. ed. 1. p. 1054 (1753), et Gen. Pl. p. 1155 (1754); LAUTH, De Acere (1781); DC., Prodr. I. p. 593 (1824); ENDL., Gen. Pl. n. 5558 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 409 (1862); BAILL., Nat. Hist. Pl. V. p. 427 1874; DIPPEL, Hand. Laubholz. II. p. 407 (1892); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 269 (1893), et ENGL. Pfl.-reich. IV. 163 (Heft 8) p. 6 1902; KOIDZ., Rev. Acer. Jap. p. 2 (1911); LEMÉE, Dict. Gen. Pl. Phan. I. p. 24 1929

Syn. *Ruacer*, ADANS., Fam. II. p. 383 (1763)

Euacer, OPIZ., Seznam. p. 42 (1852)

Acer insulare, MAK., in Tokyo Bot. Mag. XXIV. p. 293 1910; KOIDZ., Rev. Acer. Jap. p. 14 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 93 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 692 (1931)

Nom. Jap. *Sima-uri-kaede*

Leg. Jul. 21, 1927.

Distr. Amami-Ōsima

Note. The species is found from the sea level up to 1700 m above, especially in clearings, and it is restricted to this island and Amami-Ōsima.

Acer morifolium, KOIDZ., in Tokyo Bot. Mag. XXVIII. p. 151 1914; MASAMUNE, Prel. Rep. Veg. Yak. p. 93 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 694 1931

Nom. Jap. *Yakusima-onagakaede*

Leg. Jul. 22, 1924.

Distr. Endemica.

Note. I doubt if the species can be the same one as *A. insulare*.

Acer pictum, THUNB., Fl. Jap. p. 162 (1784); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 156 (1845); KOCH, in MIQ. Ann. Mus. Bot. Lugd. Bat. I. p. 251 1864, et Dendr. I. p. 531 (1869); FR. et SAV., Enum. Pl. Jap. I. p. 87 (1875), et II. p. 318 1876; MAXIM., in Mém. Biolog. X. p. 599 (1880); FR., Pl. David. p. 77 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 141 (1886); PAX, in ENGL. Bot. Jahrb. VII. p. 235 (1886), et in ENGL. Pfl.-reich. IV. (Heft 8) p. 47 (1902); SARGENT, For. Fl. Jap. p. 28 (1893); KOIDZ., Pl. Sachal. Nakah. p. 89 (1910), et Rev. Acer. Pl. Jap. p. 58 (1911); SHIRASAWA, Ic. Tree. Jap. ed. 2. I. p. 182. Pl. 65. ff. 1-12 (1911); SCHNEID., III. Handb. Laubholz. II. p. 225 f. 150a. e-f (1912); MORI, Enum. Pl. Cor. p. 240 (1922); REHDER, Manual. Cult. Tree. & Shrub. p. 562 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 93 (1929); MIY. et KUDO, Ic. Ess. For. Tr. Hokk. III. Pl. LXXI. (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 697 (1931)

Syn. *Acer pictum*, THUNB. var. *Mono*, PAX, in Engl. Bot. Jahrb. VII. p. 236 (1886) p.p.; TAKEDA, Fl. Shikotan. p. 457 (1914); KUDO, Contr. Fl. N. Saghal. p. 46 (1923)

Acer pictum, THUNB. var. *typicum*, subvar. *Mono*, PAX, in ENGL. Pfl.-reich. IV. (Heft 8) p. 47 (1902) p.; KOIDZ., Rev. Acer. Jap. p. 62 (1911); NAK., Fl. Kor. II. p. 462 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 331 (1912); MIY. et MIYAKE, Fl. Sagh. p. 97 (1915); YAMAZUTA, List Manch. Pl. p. 184 (1930)

Nom. Jap. *Itaya-kaede*

Leg. Y. KUDO! Inter Miyanoura et Yadake, Aug. 1907.

Distr. Saghalien, Southern Kuriles, Yezo, Honsyû, Korea, Manchuria.

Note. I have not collected this species in the island, but Dr. KUDO told me that he had done so on one occasion.

Acer rufinerve, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 155 (1845); KOCH, in MIQ. Ann. Mus. Bot. Lugd. Bat. I. p. 251 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 89 (1875); MAXIM., in Mél. Biolog. X. p. 596 (1880); PAX, in Engl. Bot. Jahrb. VII. p. 247 (1886), et in ENGL. Pfl.-reich. 163, IV. (Heft 8) p. 69 (1902); DIPPEL, Handb. Laubholz. II. p. 415, f. 192 (1892); SCHN., Ill. Handb. Laubh. II. p. 237 (1907); KODIZ., Rev. Acer. Jap. p. 19 (1911); REHDER, Man. Cult. Tree. & Shrub. p. 573 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 698 (1931)

Syn. *Acer pennsylvanicum*, var. *rufinerve*, WESML., in Bull. Soc. Bot. Belgique XXIX. p. 62 (1890)

Acer rufinerve, SIEB. et ZUCC., f. *normale*, GR. SCHW., in Gart. f. p. 454 (1893)

Nom. Jap. *Urihada-kaede*

Leg. Ipse, Jul. 28, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is rarely found at nearly 1700 m above the sea level near the timber line and it has its southern limit in this island.

Acer Sieboldianum, MIQ. var. *typicum*, MAXIM., in Mél. Biolog. XII. p. 433 (1886); PAX, in ENGL. Pfl.-reich. IV. 163, (Heft 8) p. 25 (1902); KOIDZ., Rev. Acer. Jap. p. 36 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 699 (1931)

Syn. *Acer Sieboldianum*, MIQ. var. *microphyllum*, (non MAXIM. MASAM., Prel. Rep. Veg. Yak. p. 93 (1929)

Nom. Jap. *Itayameigetu*

Leg. Ipse, Aug. 31, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. The species grows in the laurisilvae from 1000 m above the sea level, and is not reported further south than Amami-Ôsima.

It is an interesting fact that the representatives of the *Aceraceous* plants in this island do not reach either to Okinawa or to Formosa, and only extend southward as far as Amami-Ôsima. *Acer insulare* is endemic only to this island and Amami-Ôsima. These facts indicate that the island and Amami-Ôsima are in similar phytogeographic conditions where the plants of *Aceraceae* are concerned. Another interesting fact is that *Acer oblongum*, an evergreen tree which appears in Okinawa and in Formosa belongs to a different group of *Acer*. Basing myself upon these facts I would draw a line of demarkation

Yak. p. 93 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 704 (1931)

Syn. *Meliosma pungens*, WALP.; HOOK. f., Fl. Brit. Ind. II. p. 4 (1876); ITO et MATSUM., Tent. Fl. Lutch. I. p. (124) 391 (1899); MATSUM., Ind. Pl. Jap. II. 2, p. 335 (1912)

Nom. Jap. Yamabiwa

Leg. Ipse, Sept. 7, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is frequently found in the laurisilvae near the sea level. It is often found in southern Japan, and reaches as far north as the Province of Ise, situated in the middle part of Honsyû.

| Name of Plant | Regions | |
|---|-------------------------------|---|
| | | |
| <i>Meliosma rigida</i> , SIEB. et ZUCC. | Philippines | |
| | Bonins | + |
| | Taiwan | + |
| | Okinawa | + |
| | Amami-Ōshima | + |
| | Tanegasima | + |
| | Kyūsyū Prop. | + |
| | Sikoku | + |
| | Honsyū | + |
| | Korea | |
| | Yezo & Southern Kuriles | |
| | Saghalien | |
| | Northern Kuriles & Kamtchatka | |
| | Manchuria, Amur & Usuri | |
| | China | + |

Sabiaceae has only one representative which is common in South Japan. In regard of this family the island is related both to the northern and to southern lands.

Rhamnaceae

Rhamnaceae, LINDL., Nat. Syst. ed. 2. p. 107 (1836)

Berchemia, NECK., Elem. II. p. 122 (1790 ; DC., Prodr. II. p. 22. (1825); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 377 (1862); WEBERBAUER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 405 (1895); LEMÉE, Dict. Gen. Pl. Phan. I. p. 553 (1929)

Syn. *Oenoplea*, HEDWIG. f., Gen. I. p. 151 (1806)

Oenophia, SCHULT., ex ROEMER et SCHULTES, Syst. V. p. 332 (1819)

Berchemia magna, KOIDZ., in Tokyo Bot. Mag. XXX. p. 325 (1916); MASAMUNE, Prel. Rep. Veg. Yak. p. 93 (1929)

Syn. *Berchemia racemosa*, var. *magna*, MAK., in Tokyo Bot. Mag. VI. p. 170 (1892);
MAK et NEM., Fl. Jap. ed. 2. p. 707 (1931)

Nom. Jap. *Ô-kumayanagi*

Leg. Ipse, Nagata, Aug. 20. 1928.

Distr. Sikoku, Kyûsyû, Okinawa.

Note. The species is found in the lauri-aciculilvae near the sea level. It occurs rather rarely in southern Sikoku and Kyûsyû, but I doubt this species is the same species as *B. formosana*, SCHNEID. found in Formosa.

Berchemia racemosa, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 147 (1845); BENTH., Fl. Hongk. p. 67 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 31 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 81 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 127 (1886); MATSUM. et HAY., Enum. Pl. Formos. p. 87 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 337 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 63 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 155 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 93 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 707 (1931).

Nom. Jap. *Kumayanagi*

Leg. Ipse, Jul. 18, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China.

Note. The species grows in somewhat open lands, such as clearings or by the roadside found in the lauri-aciculilvae near the sea level. It is widely distributed in eastern Asia.

Rhamnus, [TOURN., ex LINN. Syst. ed. 1 (1735, et Gen. Pl. ed. 1. p. 58 (1737)] et Sp. Pl. ed. 1. p. 195 (1753); DC., Prodr. II. p. 23 (1825); ENDL., Gen. Pl. n. 5722 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 377 (1862); WEBERBAUER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 409 (1895)

Syn. *Paliurus*, (TOURN.) ex MILL., Gard. Dict. ed. 6 (1752)

Frangula, (TOURN.) MILL., Gard. Dict. ed. 6 (1752)

Rhamnus crenatus, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 146 (1845); MAXIM., Rham. Or. As. p. 18 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 82 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 339 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 64 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 157 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 93 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 709 (1931)

Syn. *Frangula crenata*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 32 (1867); MORI, Enum. Pl. Cor. p. 243 (1922)

Nom. Jap. *Isonoki*

Leg. Ipse, Kosugidani

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, China.

Note. The species occurs in the lauri-aciculilvae. It is distributed in lands north of Yakusima and is not found in more southern lands than Amami-Ôsima. It is reported in DUNN and TUTCHER's and CHUNG's works to have been found in China, but I think it is questionable whether the species is the same or not.

var. *yakushimensis*, MAK., in Amami-Ôsima ni okeru Hakubutu-tyôsa. p. 92 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 94 (1929)

Folia longe-lanceolata cetrifolia ut typo.

Nom. Jap. *Hosoba-isonoki*

Leg. Ipse, Tatyûdake, Jul. 22, 1927.

Distr. Endemica.

Note. The variety is found in the lauri-aciculilvae and especially on granite rocks.

| Names of Plants | Regions | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|------------|--------------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | Manchuria, Amur & Usuri |
| | | | | | | | | | | | China |
| Berchemia magna, KOIDZ. | | | | + | | | + | + | | | |
| Berchemia racemosa, SIEB. et ZUCC. | | + | | + | + | | + | + | + | | + |
| Rhamnus crenatus, SIEB. et ZUCC. | | | | | + | | + | + | + | + | |
| R. c. var. yakushimensis, MAK. | | | | | | | | | | | |

From the above table it appears that Yakusima is related to Kyusyū, Sikoku and Honsyū, so far as the distribution of three species of *Rhamnaceae* is concerned. This fact clearly denotes that the Sititō Nada has an important meaning as a line of demarkation for the phytogeography of the *Rhamnaceae*.

Sarmentaceae

Sarmentaceae, VENT., Tab. III. p. 167 (1799); LAMARK. et DC., Fl. Fr. IV. p. 856 (1815)

Syn. Vitaceae, LINDL., Nat. Syst. ed. 2. p. 30 (1836)

Vitis, TOURN., ex LINN. Syst. ed. 1 (1735), Gen. Pl. ed. 1. p. 56 (1737)] et Sp. Pl. ed. 1. p. 202 (1753); DC., Prodr. I. p. 633 (1824); ENDL., Gen. Pl. n. 4567 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 387 (1862); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 442 (1896) p.p.

Vitis flexuosa, THUNB., in Trans. Linn. Soc. II. p. 332 (1793); WILL., Sp. Pl. I. p. 1181 (1798); POIRET, in Lam. Encycl. VIII. p. 607 (1808); DC., Prodr. I. p. 634 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 92 (1863); FR. et SAV., Enum. Pl. Jap. I. p. 83 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 132 (1886); PLANCH., in DC. Monogr. V. 2. pp. 347 et 611 (1887); PALIB., Consp. Fl. Kor. I. p. 56 (1898); DIELS, Fl. Centr. Chin. p. 463 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 89 (1906); MAK., in Tokyo Bot. Mag. XX. p. 11 (1906); NAK., Fl. Kor. I. p. 129 (1909), et Fl. Sylv. Kor. XII. p. 18. Pl. IV. (1922); MATSUM., Ind. Pl. Jap. II. 2. p. 343 (1912); GAGNEPAIN, in SARG. Pl. Wils. I. p. 102 (1914);

MERR., Enum. Philipp. Pl. III. p. 1 (1923); CHUN., Cat. Tree. & Shrub. Chin. p. 159 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 94 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 715 (1931)

Syn. *Vitis indica*, (non LINN.) THUNB., Fl. Jap. p. 103 (1784)

Vitis parvifolia, ROXB., Fl. Ind. I. p. 662 (1832); BENTH., Fl. Hongk. p. 53 (1861); LAW., in HOOK. f. Fl. Brit. Ind. I. p. 652 (1875)

Nom. Jap. *Gyôzya-no-mizu*

Leg. Ipse, Jun. 6, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, China, Philippines.

Note. The species is found in the laurisilvae and in the lauri-aciculisilvae, and is common in eastern Asia.

Vitis Thunbergii, SIEB. et ZUCC. var. *typica*, MAK., in Journ. Jap. Bot. I. p. 32 (1918); MAK. et NEM., Fl. Jap. ed. 2. p. 717 (1931)

Syn. *Vitis Labrusca*, (non LINN.) THUNB., Fl. Jap. p. 134 (1784); ENGL., in Engl. Bot. Jahrb. VI. p. 60 (1885)

Vitis Thunbergii, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 198 (1845); PLANCH., in DC. Monogr. Phan. V. 2. pp. 333, et 611 (1887); FORB. et HEMSL., Ind. Fl. Sin. I. p. 134 (1886) p.p.; LOESEN., Pfl.-welt. Kiaut. Geb. p. 154 (1918); CHUN., Cat. Tree. & Shrub. Chin. p. 160 (1924)

Vitis Labrusca, var. *Thunbergii*, FR. et SAV., Enum. Pl. Jap. I. p. 134 (1875) *in nota*; ITO et MATSUM., Tent. Fl. Lutch. I. p. 379 (1899)

Vitis ficifolia, BUNGE, var. *Thunbergii*, (non NAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 94 (1929)

Nom. Jap. *Ebizuru*

Leg. Ipse, Onoaida, Sept. 6, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is common in eastern Asia, and in the island it is found in somewhat sunny spots near the sea level.

Psedera, NECH., Elem. Bot. I. p. 158 (1790);

SCHNEIDER, Ill. Handb. Laubholzk. II. p. 313 (1909)

Syn. *Ampelopsis*, MICHAUX, Fl. Bor.-Americ. I. p. 160 (1803) p.p.; DC., Prodr. I. p. 632 (1824) p.p.

Cissus, PERS., Syn. Pl. I. p. 142 (1805) p.p.

Quinaria, (non LOUR.) RAFIN., Amer. Manual. Grap. Vine, p. 6 (1830); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 448 (1896)

Vitis, BENTH. et HOOK. f., Gen. Pl. I. p. 387 (1862) p.p.

Parthenocissus, PLANCON, in DC., Monogr. Phan. V. 2. p. 447 (1887)

Psedera Thunbergii, (SIEB. et ZUCC.) NAK., Fl. Sylv. Kor. XII. p. 11, Pl. 1 (1922); MIURA, List Pl. Manch. & Mong. p. 249 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 94 (1929)

Syn. *Cissus Thunbergii*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 195 (1845)

Ampelopsis tricuspidata, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 196 (1845)

Vitis inconstans, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 91 (1863); REGEL, Consp. Gen. Vitis. p. 5 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 84 (1875), et II. p. 316 (1879); FORB. et HEMSL., Ind. Fl. Sin. I. p. 133 (1886); DIPPEL, Handb. Laubholzk. II. p. 570 (1892); MATSUM. et HAY., Enum. Pl. Formos.

p. 91 (1906); HAY., Ic. Pl. Formos. I. p. 148 (1911); BEAN, Tr. & Shrub. II. p. 671 (1914)

Vitis capreolata, (non DON) KOCH, Dendr. I. p. 556 (1869)

Parthenocissus tricuspidata, PLANCH., in DC. Monogr. Phan. V. 2. p. 452 (1887); MATSUM., Ind. Pl. Jap. II. 2. p. 342 (1912); GAGNEPAIN, in SARGENT, Pl. Wils. I. p. 102 (1914)

Quinaria tricuspidata, KOEHNE, Deutsch. Dendr. p. 383 (1893); GILG, in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 449 (1886); NAK., Fl. Kor. I. p. 131 (1909)

Pseodera tricuspidata, REHD., in Rhodora X. p. 29 (1908); SCHNEID., Ill. Handb. Laubholzk. II. p. 315, f. 211, f-i (1909)

Nom. Jap. Tuta

Leg. A. KIMURA! Aug. 7, 1922.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria.

Note. Grows on lowlands, on cultivated ground or in the laurisilvae; common in the Far East.

Ampelopsis, (L. C. RICH.) in MICHX., in Fl. Bor.-Amer. I. p. 159 (1803) partim; DC., Prodr. I. p. 632 (1824) p.p.; BENTH. et HOOK. f., Gen. Pl. I. 1. p. 387 (1862); PLANCH., in DC. Monogr. Phan. V. 2. p. 453 (1887); DIPPEL, Handb. Laubholzk. II. p. 574 (1892); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 449 (1896); LEMÉE, Dict. Gen. Pl. Phan. I. p. 211 (1929)

Syn. *Cissus*, PERSOON, Syn. Pl. I. p. 143 (1805); ENDL., Gen. Pl. n. 4566 (1836-40) p.p. *Vitis*, LINK, Enum. Pl. Hort. Berol. p. 235 (1821) p.p.; BENTH. et HOOK. f., Gen. Pl. I. p. 387 (1862) p.p.

Ampelopsis heterophylla, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 197 (1845); PLANCH., in DC. Monogr. Phan. V. 2. p. 455 (1887) excl. var. *Wallichii*; GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. v. p. 449 (1896); KOM., Fl. Mansh. III. p. 20 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 341 (1912); BRITT. & BROWN, Ill. Fl. North Unit. St. II. p. 412 (1913); NAK., Fl. Syl. Kor. XII. p. 15. t. III. (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 94 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 712 (1931)

Syn. *Vitis heterophylla*, THUNB., Fl. Jap. p. 103 (1784); DC., Prodr. I. p. 634 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 92 (1863), et II. p. 157 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 84 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 133 (1886); DIPPEL, Handb. Laubholzk. II. p. 565, f. 268 (1892); ITO et MATSUM., Tent. Fl. Lutch. I. p. 114 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 90 (1906)

Ampelopsis humulifolia, BUNGE, Enum. Pl. Chin. Bor. n. 69 (1832); MAXIM., Prim. Fl. Amur. p. 480 (1859); CHUN., Cat. Tree. & Shrub. Chin. p. 162 (1924)

Cissus brevipedunculata, MAXIM., Prim. Fl. Amur. p. 68 (1859)

Cissus bryoniaefolia, (non BUNGE) REGEL, Tent. Fl. Uss. t. 41 f. 3 (1861)

Vitis heterophylla, var. *humulifolia*, HOOK. f., in Bot. Mag. t. 5682 (1867)

Ampelopsis heterophylla, SIEB. et ZUCC. var. *Bungei*, NAK., Fl. Kor. I. p. 130 (1909)

Nom. Jap. Nobuddô

Leg. Ipse, Aug. 9, 1922.

| Names of Plants | Regions | Philippines | | Ryūkyūs | | Kyūsyū | | Sikoku | | Honsyū | | Korea | | Yezo & Southern Kuriles | | Saghalien | | Northern Kuriles & Kamtchatka | | Manchuria, Amur & Ussuri | | China | |
|---|---------|-------------|--------|---------|--------------|------------|--------------|--------|-----|--------|----|-------|---|-------------------------|---|-----------|--|-------------------------------|--|--------------------------|----|-------|--|
| | | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | | | | | | | | | | | | | | | | |
| <i>Psedera Thunbergii</i> , NAK. | | | + | + | + | | + | + | + | + | + | | + | | | | | | | + | + | | |
| <i>Ampelopsis heterophylla</i> , SIEB. et ZUCC. . . | | | + | + | + | + | + | + | + | + | + | | + | | | | | | | + | + | | |
| <i>Ampelopsis leeooides</i> , PLANCH. | | | | | | + | + | | | + | | | | | | | | | | | | | |
| <i>Columella japonica</i> , MERR. | | | + | + | + | | + | + | + | + | + | | + | + | + | | | | | | | + | |
| Total | 6 | 1 | 5 | 5 | 5 | 3 | 6 | 5 | 6 | 4 | 3 | | | | | | | | | 2 | 5 | | |
| Percentage | | 15 | 83 | 83 | 83 | 50 | 100 | 83 | 100 | 67 | 50 | | | | | | | | | 33 | 83 | | |

(Southern elements 5)
(Northern elements 6)

The species of this family indigenous to our island are distributed generally in eastern Asia, excepting *Ampelopsis leoides* which is not yet reported further south than this island. In this respect the island is related to the northern floral regions.

Elaeocarpaceae

Elaeocarpaceae, LINDL., Nat. Syst. ed. 2. p. 97 (1836)

Elaeocarpus, [BURM., ex LINN. Nov. Pl. Gen. p. 11 (1747), Amone. Acad. I. p. 402 (1749)] et Sp. Pl. ed. 1. p. 515 (1753); DC., Prodr. I. p. 519 (1824); ENDL., Gen. Pl. n. 5384 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 1. p. 239 (1862); SCHM., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 5 (1890); LEMÉE, Dict. Gen. Pl. Phan. II. p. 812 (1930)

Syn. *Lochneria*, SCOP., Introd. p. 271 (1777)
Adenodus, LOUR., Fl. Cochinch. p. 294 (1790)

Elaeocarpus elliptica, (ut *ellipticus*) MAK., in Tokyo Bot. Mag. XVIII. p. 67 (1904);
NAK., Fl. Syl. Kor. XII. p. 63, t. XVIII. (1922); MASAMUNE, Prel. Rep. Veg. Yak.
p. 94 (1929)
Syn. Prunus elliptica, THUNB., Fl. Jap. p. 199 (1784); WILLD., Sp. Pl. II. p. 986
(1799); PERS., Syn. Pl. II. p. 34 (1807); SPRENG., Syst. Veg. II. p. 478 (1825)

In this family the island shows no special affinity either to the northern or to the southern lands beyond Yakusima.

Tiliaceae

Tiliaceae, JUSS., Gen. Pl. p. 289 (1789)

Triumfetta, [PLUM, ex LINN. Gen. Pl. ed. 1. p. 344 (1737)] et Sp. Pl. ed. 1. p. 444 (1753); DC., Prodr. I. p. 506 (1824); ENDL., Gen. Pl. n. 5372 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 234 (1862); K. SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 28 (1890)

Triumfetta japonica, MAK., in Tokyo Bot. Mag. XXVII. p. 245 (1913); MORI, Enum. Pl. Cor. p. 249 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 720 (1931)

Syn. *Triumfetta trichoclada*, (non LINK) FR. et SAV., Enum. Pl. Jap. I. p. 66 (1875)
Triumfetta annua, (non LINN.) ITO et MATSUM., Tent. Fl. Lutch. I. p. 80
 (1899); MAK., in INUMA, Somoku-zusetu ed. 3, II. p. 636 t. 28 (1910);
 MATSUM., Ind. Pl. Jap. II. 2. p. 347 (1912)

Nom. Jap. Rasensô

Leg. Ipse, Miyanoura.

Distr. Honsyû, Sikoku, Amami-Ôsima, Okinawa, Korea.

Note. The species grows along the roadside or on waste lands near the sea level, and is common in the center and south of Japan.

| Name of Plant | Regions | |
|---------------|-------------------------------|---------|
| | Philippines | |
| | Bonins | |
| | Taiwan | |
| | Okinawa | Ryūkyūs |
| | Amami-Ōshima | |
| | Tanegasima | Kyūsū |
| | Kyūsū Prop. | |
| | Sikoku | |
| | Honsū | |
| | Korea | |
| | Yezo & Southern Kuriles | |
| | Saghalien | |
| | Northern Kuriles & Kamtchatka | |
| | Manchuria, Amur & Ussuri | |
| | China | |

Triumfetta japonica is the only representative of this family in this island, and it is rather common in South Japan. So I can not deduce any special affinity between this island and neighbouring regions.

Malvaceae

Malvaceae, JUSS., Gen. Pl. p. 271 (1789)

Sida, [LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 683 (1753); DC., Prodr. I. p. 459 (1824); ENDL., Gen. Pl. n. 5289 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 203 (1862); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 42 (1890)

Syn. *Lamarckia*, MEDIK., Phil. Bot. I. p. 28 (1789)

Sida rhombifolia, LINN., Sp. Pl. ed. 1. p. 684 (1753); DC., Prodr. I. p. 462 (1824); BENTH., Fl. Hongk. p. 32 (1861); MAST., in HOOK. f. Fl. Brit. Ind. I. p. 323 (1872); FORB. et HEMSL., Ind. Fl. Sin. I. p. 85 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 67 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 52 (1906); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. I. 4. p. 405 (1910); MATSUM., Ind. Pl. Jap. II. 2. p. 352 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 47 (1912); MERR., Enum. Philipp. Pl. III. p. 35 (1923), et in Lingn. Sc. Journ. IX. p. 40 (1930); CHUN., Cat. Tree. & Shrub. Chin. p. 166 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 260 (1930); MAK. et NEM., Fl. Jap. ed. 2 p. 728 (1931)

Syn. *Sida Chinensis*, RETZ., Obs. f. IV. p. 29 (1779-91)

Sida Philippica, DC., Prodr. I. p. 462 (1824)

Nom. Jap. *Kingózyukwa*

Leg. Ipse, Jul. 15, 1922.

Distr. Kyúsyú, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines.

Note. Grows on waste low lands.

Urena, [DILL., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 692 (1753); DC., Prodr. I. p. 441 (1824); ENDL., Gen. Pl. n. 5274 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 205 (1862); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 45 (1890)

Urena lobata, LINN. var. *tomentosa*, MIQ., Pl. Jungh. III. p. 283 (1854), et Fl. Ind. Bat. I. ii. p. 148 (1859); GÜRKE, in Engl. Bot. Jahrb. XVI. p. 372 (1893); ITO et MATSUM., Tent. Fl. Lutch. I. p. 336 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 353 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 728 (1931)

Syn. *Urena tomentosa*, BL., Bijdr. p. 66 (1825)

Urena heterophylla, (non PRESL.), BL., Bijdr. p. 66 (1825); MIQ., Fl. Ind. Bat. II. 2. p. 149 (1859)

Nom. Jap. *Ôbontenkwa*

Leg. Ipse, Jul. 26, 1928.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. Grows by the roadside or in waste lands.

Urena sinuata, LINN., Sp. Pl. ed. 1. p. 692 (1753); DC., Prodr. I. p. 442 (1824); ROXB., Fl. Ind. III. p. 182 (1832); BENTH., Fl. Hongk. p. 34 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 20 (1867); MAST., in HOOK. f. Fl. Brit. Ind. I. p. 329 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 63 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 87 (1883); ITO et MATSUM., Tent. Fl. Lutch. I. p. 337 (1899); MATSUM.

et HAY., Enum. Pl. Formos. p. 54 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 353 (1912); DUNN et TUNCH., Fl. Kwang. & Hongk. p. 48 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 728 (1931)

Syn. *Urena muricata*, DC., Prodr. I. p. 442 (1824)

Urena lobata, var. *sinuata*, GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. I. 4. p. 414 (1910)

Nom. Jap. *Bontenkuwa*

Leg. Ipse, Onoaida, 1928.

Distr. Kyûsyû, Okinawa, Taiwan, China.

Note. Grows in waste lands and by the roadside.

Hibiscus, [LINN., Gen. Pl. ed. 1. p. 207 (1737)] et Sp. Pl. ed. 1. p. 693 (1753); DC., Prodr. I. p. 446 (1824); ENDL., Gen. Pl. n. 5277 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 207 (1862); K. SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 48 (1890); LEMÉE, Dict. Gen. Pl. Phan. III. p. 586 (1931)

Syn. *Pariti*, ADANS., Fam. II. p. 40 (1763)

Hibiscus hamabo, SIEB. et ZUCC., Fl. Jap. I. p. 176 t. 93 (1841); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 19 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 63 (1875); MORI, Enum. Pl. Cor. p. 249 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 725 (1931)

Syn. *Hibiscus tiliaceus*, LINN. var. *Hamabo*, MAXIM., in Mél. Biolog. XII. p. 427 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 72 1839; MATSUM., Ind. Pl. Jap. II. 2. p. 350 (1912)

Nom. Jap. *Hamabô*

Leg. Ipse, Jul. 4, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea.

Note. It is found in wet and muddy place where *Kandelia* grows as a member of the mangrove forest.

Hibiscus mutabilis, LINN., Sp. Pl. ed. 1. p. 694 (1753); THUNB., Fl. Jap. p. 272 (1784); LOUR., Fl. Cochinch. p. 419 (1790); Bot. Reg. t. 589 (1818); DC., Prodr. I. p. 452 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 19 (1867); MAST., in HOOK. f. Fl. Brit. Ind. I. p. 344 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 64 (1875); FR., Pl. David. I. p. 58 (1884); MAXIM., in Mél. Biolog. XII. p. 427 (1886); FORB. et HEMSL., Ind. Fl. Sin. I. p. 87 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 73 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 55 (1906); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. I. 4. p. 428 (1910); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 48 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 349 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 725 (1931)

Nom. Jap. *Huyô*

Leg. Ipse, Kurio, Aug. 1, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. Occurs in sunny places by the roadside or in waste lands at low altitudes.

Nearly all the elements of this family are found in both southern and northern regions beyond Yakusima, and we can not decide to which region the island is most closely related. All the species,

| Names of Plants | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|-----------------------|------------|--------------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | China |
| <i>Sida rhombifolia</i> , LINN. | + | + | + | + | + | + | + | + | + | + |
| <i>Urena lobata</i> , LINN. var. <i>tomentosa</i> , MIQ. | + | | + | + | + | + | + | + | | + |
| <i>Urena sinuata</i> , LINN. | | | + | + | + | | + | | | + |
| <i>Hibiscus Hamabo</i> , SIEB. et ZUCC. | | | | + | + | | | + | + | |
| <i>Hibiscus mutabilis</i> , LINN. | | | + | + | + | + | + | | | + |
| Total | 5 | 2 | 1 | 4 | 5 | 5 | 3 | 5 | 1 | 1 |
| Percentage | | 40 | 20 | 80 | 100 | 100 | 60 | 100 | 20 | 20 |
| Southern elements 5) | | | | | | (Northern elements 5) | | | | |

however, are rather widely distributed in the southern regions and range northward passing this island as far as the southern parts of Kyûsyû, Sikoku, and Honsyû.

Actinidiaceae

Actinidiaceae, GILG. u. WERDERMANN, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. Band 21. p. 31 1925

Actinidia, LINDL., Nat. Syst. ed. 2. p. 439 (1836 ; ENDL., Gen. Pl. p. 841 (1836-40) ; BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 184 1862 ; GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 125 (1893) ; SCHNEID., Ill. Handb. Laubholzk. II. p. 323 (1909) ; GILG. u. WERDERM., in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 21. p. 41 (1925) ; LEMÉE, Dict. Gen. Pl. Phan. I. p. 58 (1929)

Syn. Trochostigma, SIEB. et ZUCC., in Abh. Akad. Wiss. Munch. III. p. 726, t. 2. f. 2. (1843)

Kalomikta, REGEL, in Acad. St.-Petersb. XV. p. 219 (1857)

Actinidia callosa, LINDL. var. *rufa*, MAK., in Tokyo Bot. Mag. XV. p. 147 (1901) ; MATSUM., Ind. Pl. Jap. II. 2. p. 356 (1912) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 95 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 733 (1931)

Syn. *Trochostigma rufa*, SIEB. et ZUCC., Pl. Jap. Gen. Nov. p. 727 (1843), et Fl. Jap. Fam. Nat. I. p. 164 (1845); A. GRAY, Bot. Japan. p. 383 (1858)

Actinidia rufa, PLANCH., in Hook. Lond. Journ. Bot. VI. p. 303 (1847); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 15 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 58 (1875); FIN. et GAGN., in Bull. Soc. Bot. Fr. p. 21 (1905)

Actinidia arguta, var. *rufa*, MAXIM., in Mém. Biolog. XII. p. 424 (1886); NAK., Fl. Kor. I. p. 99 (1909)

Actinidia collosa, (non LIND.) FORB. et HEMSL., Ind. Fl. Sin. I. p. 78 (1886) *excl. syn.*

Nom. Jap. *Nasikazura*

Leg. Ipse, Koseda, Jun. 20, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, China.

Note. This is one of the components that constitute the laurisilvae or the lauri-aciculisilvae, and is found from the sea level up to about 700 m.

var. *arguta*, MAK., in Tokyo Bot. Mag. XV. p. 148 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 356 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 733 (1931)

Syn. *Trochostigma arguta*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 164 (1845)

Actinidia arguta, PLANCH., in Hook. Lond. Journ. Bot. VI. p. 303 (1847); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 15 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 58 (1875); NAK., Fl. Kor. I. p. 99 (1909); YABE, Enum. Pl. Manch. p. 93 (1912); MIY. et MIYAKE, Fl. Saghal. p. 80 (1915)

Actinidia cordifolia, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 15 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 58 (1875)

Actinidia volubilis, (non PLANCH.) K. ITO et H. KAKU, Ic. et Descr. Pl. Hort. Koisik. II. 2. t. 23 (1834)

Nom. Jap. *Sarunasi*

Leg. Ipse, Aug. 20, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The plant is found in the lauri-aciculisilvae, but it is not yet found in lands further south than this island.

Actinidia Kiusiana, KOIDZ., Pl. Nov. Amami-Oh. p. 9 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 734 (1931)

Nom. Jap. *Nagaba-sirakuti-zuru*

Leg. A. KIMURA! Aug. 6, 1912.

Distr. Tanegasima.

Note. The species is restricted to Tanegasima and Yakusima, and is found near the sea level.

Actinidia polygama, PLANCH., in Hook. Lond. Journ. Bot. VI. p. 303 (1847); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 15 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 59 (1875); MAXIM., in Mém. Biolog. XII. p. 425 (1886); FINET et GAGN., in Bull. Soc. Bot. Fr. p. 20 (1905); NAK., Fl. Kor. I. p. 98 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 357 (1912); MIY. et MIYAKE, Fl. Saghal. p. 81. (1915); MIURA, List Pl. Manch. & Mong. p. 254 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 734 (1931)

Syn. *Trochostigma polygama*, SIEB. et ZUCC., in Abh. Acad. III. p. 728 (1843)

Trochostigma volubilis, SIEB. et ZUCC., in Abh. Acad. III. p. 728 (1843)

Trochostigma repanda, SIEB. et ZUCC., in Abh. Acad. III. p. 728 (1843)

Actinidia volubilis, PLANCH., in Hook. Lond. Journ. Bot. VI. p. 303 1847 ;

FR. et SAV., Enum. Pl. Jap. I. p. 59 (1875)

Nom. Jap. Matatabi

Leg. Ipse, Yaegadake, Jun. 11, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. It is found in the laurisilvae and has its southern limit in this island.

| Names of Plants | Regions | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------|--------------|--------|--------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôshima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea |
| | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | Saghalien |
| | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | China |
| <i>Actinidia callosa</i> , LINDL. var. <i>rufa</i> , MAK. | | | | + | + | + | + | + | + | + |
| <i>A. c.</i> var. <i>arguta</i> , MAK. | | | | | | | + | + | + | + |
| <i>Actinidia Kiusiana</i> , KOIDZ. | | | | | | + | | | | |
| <i>Actinidia polygama</i> , PLANCH. | | | | | | | + | + | + | + |

Considering the geographical distribution of the *Actinidiaceae* plants indigenous to this island, the island is related in many respects to the northern lands.

Theaceae

Theaceae, (*Théacées*) MIRB., in Bull. Soc. Philom. III. p. 381 (1813)

Syn. *Ternstroemiaceae*, R. BR., in Abel. Narr. Journ. Chin. App. B. p. 378 1818 ;

A. DC., in Mém. Soc. Hist. Nat. Genève 2 sér. V. p. 13 1823

Camelliaceae, DUMORT, Anal. Fam. pp. 43, 47 (1829)

Camellia, [LINN., Syst. ed. 1 (1735) et Sp. Pl. ed. 1. p. 698 (1753) ; DC., Prodr. I. p. 529 (1824) ; ENDL., Gen. Pl. n. 5425 (1840) ; BENTH. et HOOK. f., Gen. Pl. I. p. 187 (1862) ; MELCHIOR, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 21. p. 128 (1925) p.p. ; LEMÉE, Dict. Gen. Pl. Phan. I. p. 795 (1929) p.p.]

Syn. *Tsubaki*, ADANS., Fam. II. p. 399 (1763)

Sasanqua, NEES, in Flora IV. p. 144 (1834)

Thea, SZYSL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 182 (1893) p.p.

Camellia japonica, LINN. var. *macrocarpa*, MASAMUNE.

Syn. *Camellia japonica*, LINN., var. *spontanea*, (non MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929)

Fructus ca. 5 cm in diametro. Pericarpium ca. 1.5 cm crassum.

Nom. Jap. *Yakusimatubaki*

Leg. Ipse, Aug. 10, 1928.

Distr. Sikoku, Kyûsyû, Amami-Ôsima.

Note. Grows in the laurisilvae or the lauri-aciculisilvae.

Camellia Sasanqua, THUNB., Fl. Jap. p. 273 t. 30 (1784); SIEB. et ZUCC., Fl. Jap. p. 158 t. 83 (1841); SEEM., in Trans. Linn. Soc. XXII. p. 343 (1859); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 16 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 60 (1875); HANCE, in Journ. Bot. p. 9 (1879); FR., Pl. David. I. p. 58 (1884); ITO et MATSUM., Tent. Fl. Lutch. I. p. 63 (1899); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 740 (1931)

Syn. *Thea Sasanqua*, NOIS., ex CELS. Cat. Arb. p. 35 (1817); J. KOCH, in Engl. Bot. Jahrb. XXVII. p. 592 (1900); MATSUM., Ind. Pl. Jap. II. 2. p. 362 (1912)
Sasanqua malliflora, RAFIN., Syst. Tellur. p. 140 (1838)

Sasanqua vulgaris, NEES, in SIEB. Nipp. II. p. 13 (1897)

Thea Sasanqua, var. *serrata*, SIEB., ex KOCH, in Engl. Bot. Jahrb. XXVII. p. 593 (1900)

Nom. Jap. *Sazankwa*

Leg. Ipse, Aug. 31, 1926.

Distr. Honsyû, Tanegasima, Amami-Ôsima, Okinawa, China.

Note. The species is found in the lauri-aciculisilvae as a component of the forest.

Stewartia, [LINN., in Act. Soc. Upsal. p. 79 (1741)] et Sp. Pl. ed. 1. p. 698 (1753); ENDL., Gen. Pl. n. 5423 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 185 (1862); SZYSZ., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 186 (1893); MELCHOIR, in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 21. p. 133 (1925)

Syn. *Stewartia*, CATESB., ex MILLER Gard. Dict. ed. 6. App. p. 175 (1752)

Stewartia (Stuartia) monadelpha, SIEB. et ZUCC., Fl. Jap. I. p. 181, t. 96 (1841); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 16 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 59 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 360 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 744 (1931)

Nom. Jap. *Hime-syara*

Leg. Ipse, Kosugidani, Sept. 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. It grows in the lauri-aciculisilvae from 600 m up to 1700 m above the sea level and is not found in lands further south than this island.

Ternstroemia, MUTIS, ex LINN. f. Supp. p. 39 (1781); DC., Prodr. I. p. 523 (1824); ENDL., Gen. Pl. n. 5403 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 182 (1862); MELCHIOR, in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 21. p. 140 (1925)

Syn. *Mokof*, ADANS., Fam. II. p. 50 (1763)

Taonabo, AUBL., Hist. Pl. Gui. Fr. p. 569, tt. 227, et 228 (1775); SZYSZ., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 187 (1893) p.p.

Cleyera, THUNB., Nov. Gen. p. 68 (1783), et Fl. Jap. p. 12 (1784) p.p.

Mokofua, O. KUNTZE, Rev. Gen. Pl. I. p. 64 (1891)

Ternstroemia Mokof, NAK., Fl. Syl. Kor. XVII. p. 86 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 97 (1929)

Syn. *Cleyera japonica*, THUNB., Fl. Jap. p. 224 (1784); MURRAY, Syst. Veg. ed. 14 p. 493 (1784) p.p.; DC., Prodr. I. p. 524 (1824); POIRET, Supp. II. p. 299 (1911) p.p.

Ternstroemia japonica, THUNB., in Trans. Linn. Soc. II. p. 335 (1794); SIEB. et ZUCC., Fl. Jap. p. 148, t. 80 (1841); BENTH., Fl. Hongk. p. 27 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 14 (1867); DYER., in HOOK. f. Fl. Brit. Ind. I. p. 280 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 57 (1875); HEMSL., in FORB. et HEMSL. Ind. Fl. Sin. I. p. 75 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 324 (1899); PETARD, in LECOMTE Fl. Ind. Chin. I. 4. p. 332 (1910); HAY., Ic. Pl. Formos. I. p. 84 (1911); REHDER et WILS., in SARGENT. Pl. Wils. II. p. 397 (1916); MELCHIOR, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 21. p. 141 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 744 (1931)

Ternstroemia japonica, var. *parvifolia*, DYER, in HOOK. f. Fl. Brit. Ind. I. p. 281 (1874)

Mokofua japonica, O. KUNTZE, Rev. Gen. Pl. I. p. 64 (1891)

Taonabo japonica, SZYSZL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 188 (1893); MATSUM., Ind. Pl. Jap. II. 2. p. 360 (1912); MORI, Enum. Pl. Cor. p. 251 (1922)

Ternstroemia gymnanthera, (W. et A. SPRANGE, in Journ. Bot. XLI. p. 17 (1923); MERR., Enum. Hainan Pl. p. 129 (1927)

Nom. Jap. *Mokkoku*

Leg. Ipse, Jul. 7, 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, India.

Note. It grows in the laurisilvae, as a component of the forest.

Eurya, THUNB., Nov. Gen. Pl. III. p. 67 (1783); DC., Prodr. I. p. 525 (1824); ENDL., Gen. Pl. n. 5410 (1836-40) p.p.; BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 183 (1862) p.p.; SZYSZ., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 189 (1893) p.p.; MELCHIOR, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 21. p. 146 (1925) p.p.; LEMÉE, Dict. Gen. Pl. Phan. III. p. 50 (1931) p.p.

Syn. *Euria*, LAM., Encyl. II. p. 440 (1790) p.p.

Cleyera, DC., in Mém. Soc. Phys. Gen. I. p. 412 (1822), et. Prodr. I. p. 524 (1824) p.p.

Eurya emerginata, MAK., in Tokyo Bot. Mag. XVIII. p. 19 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 358 (1912); MELCHIOR, in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 21. p. 148 (1925); NAK., Fl. Sylv. Kor. XVII. p. 81. t. XX. (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 741 (1931)

Syn. *Ilex emarginata*, THUNB., Fl. Jap. p. 78 (1784); WILLD., Sp. Pl. I. p. 710 (1797); POIR., Supp. Encycl. III. p. 66 (1813); ROEMER et SCHULTES, Syst. Veg. III. p. 491 (1818); DC., Prodr. II. p. 16 (1825); MIQ., Cat. Mus. Bot. Lugd. Bat. p. 19 (1870)

Eurya chinensis, (non R. BR.) BL., Mus. Bot. Lugd. Bat. II. p. 108 (1852) p.p.; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 15 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 58 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 76 (1886); ITO

et MATSUM., Tent. Fl. Lutch. I. p. 326 (1899); NAK., Fl. Kor. I. p. 100 (1909)

Nom. Jap. *Hama-hisakaki*

Leg. Ipse, Sept. 5, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. This is one of the shrubs which compose littoral forests.

Eurya japonica, THUNB., Fl. Jap. p. 191, t. 25 (1784); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 260 (1836-40); BL., Mus. Bot. Lugd. Bat. II. p. 105 (1856); BENTH., Fl. Hongk. p. 28 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 14 (1867); DYER, in HOOK. f. Fl. Brit. Ind. I. p. 284 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 57 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 77 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 58 (1899); DIELS, Fl. Centr. Chin. p. 474 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 47 (1906); NAK., Fl. Kor. I. p. 100 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 358 (1912); MERR., Enum. Hainan Pl. p. 130 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 742 (1931)

Syn. *Eurya uniflora*, SIEB., ex SIEB. et ZUCC. Fl. Jap. Fam. Nat. I. p. 163 (1845)

Eurya japonica a *Thubergii*, (non THWAITES) ITO et MATSUM., Tent. Fl. Lutch. I. p. 326 (1899)

Nom. Jap. *Hisakaki*

Leg. Ipse, Aug. 1, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found from the sea level up to 1300 m above, and is common in South Japan.

var. *angustifolia*, KOIDZ., in MAYEB. Fl. Austro-hig. p. 37 (1931), et in Phytotax. et Geob. I. p. 20 (1932)

Syn. *Eurya acuminata*, (non DC.) MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929)

Nom. Jap. *Hosoba-hisakaki*

Leg. Ipse, Jun. 24, 1928.

Distr. Honsyû, Kyûsyû.

Note. The variety is not yet found in lands further south than this island.

Eurya yakushimensis, MAK., in Tokyo Bot. Mag. XXVII. p. 72 (1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 743 (1931)

Syn. *Eurya japonica*, var. *yakushimensis*, MAK., in Tokyo Bot. Mag. XXIV. p. 20 (1910)

Nom. Jap. *Hime-hisakaki*

Leg. Ipse, Jul. 10, 1928.

Distr. Endemica.

Note. It is found from 700 m up to 1800 m above the sea level and is restricted to this island. Even though it is reported in Amami-Ôsima, I have not seen any specimen from that island.

Sakakia, NAK., Fl. Sylv. Kor. XVII. p. 76 (1928)

Syn. *Cleyera*, THUNB., Nov. Gen. Pl. III. p. 69 (1783), et Fl. Jap. p. 12 (1784) p.p.; DC., Prodr. I. p. 524 (1824) p.p.; ENDL., Gen. Pl. n. 5411 (1840) p.p.; BENTH. et HOOK., Gen. Pl. I. 1. p. 183 (1862) p.p.

Sakakia ochracea, NAK., Fl. Sylv. Kor. XVII. p. 77 t. XIX. (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 96 (1929)

- Syn. Cleyera ochracea*, DC., Prodr. I. p. 524 (1824); FORB. et HEMSL., Ind. Fl. Sin. I. p. 76 (1886); MATSUM. et HAY., Enum. Pl. Formos. p. 46 (1906) p.p.
Cleyera japonica, SIEB. et ZUCC., Fl. Jap. p. 153 t. 81 (1841)
Eurya ochracea, SZYSZ; MATSUM., Ind. Pl. Jap. II. 2. p. 359 (1912); MAK. et NEM. Fl. Jap. ed. 1. p. 553 (1925), et ed. 2. p. 742 (1931)
Freziera ochracea, NAK., apud MORI, Enum. Pl. Cor. p. 251 (1922)
Nom. Jap. Sakaki
Leg. Ipse, Kosugidani, Sept. 1, 1926.
Distr. Honsyû, Sikoku, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.
Note. It grows in the laurisilvae and in the lauri-aciculisilvae.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-----------------------|--------|---------|-------------|------------|-----------------------|--------|--------|-------|-------------------------|-----------|--|
| | Philippines Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka Manchuria, Amur & Ussuri China |
| <i>Camellia japonica</i> , LINN. var. <i>macrocarpa</i> , MASAMUNE | | | | + | | + | + | | | | | |
| <i>Camellia Sasanqua</i> , THUNB. | | | + | + | + | + | | + | | | | + |
| <i>Stewartia monadelphæ</i> , SIEB. et ZUCC. | | | | | | + | + | + | | | | |
| <i>Ternstroemia Mokof</i> , NAK. | | + | + | + | + | + | + | + | + | | | + |
| <i>Eurya emerginata</i> , MAK. | | + | + | + | + | + | + | + | + | | | |
| <i>Eurya japonica</i> , THUNB. | + | + | + | + | + | + | + | + | + | | | + |
| <i>E. j.</i> var. <i>angustifolia</i> , KOIDZ. | | | | | | + | + | + | | | | |
| <i>Eurya yakushimensis</i> , MAK. | | | | | | | | | | | | |
| <i>Sakakia ochracea</i> , NAK. | | + | + | + | + | + | + | + | + | | | + |
| Total | 9 | 1 | 4 | 5 | 6 | 5 | 8 | 7 | 7 | 4 | | 4 |
| Percentage | 11 | 44 | 56 | 67 | 56 | 89 | 78 | 78 | 44 | | | 44 |
| (Southern elements 6) | | | | | | (Northern elements 8) | | | | | | |

Stewartia has its southern limit in this island. From this point of view the island shows a close relationship with the northern lands in respect of this family.

Hypericaceae

Hypericaceae, LINDL., Veg. Kingd. Ord. LVII (1846)

Syn. *Hypericineae*, DC., Théor. Élém. p. 214 (1813), et Prodr. I. p. 541 (1824);
CHOIS., Prodr. Hyp. p. 32 (1821)

Guttiferae, Subf., *Hypericoideae*, ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III.
vi. pp. 205 et 208 (1893)

Hypericum, [TOURN., ex LINN. Gen. Pl. ed. 1.
p. 231 (1737)] et Sp. Pl. ed. 1. p. 783 (1753); CHOISY, in DC. Prodr. I. p. 543
(1824); ENDL., Gen. Pl. n. 5464 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 165
(1862); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 208 (1893); KELLER,
in ENGL. u. PRANT. Nat. Pfl.-fam. 2 auf. B. 21. p. 175 (1925); LEMÉE, Dict. Gen.
Pl. III. p. 717 (1931)

Syn. *Sarothria*, LINN., Nov. Pl. Gen. p. 14 (1751)

Knifa, ADANS., Fam. II. p. 444 (1763)

Hypericon, J. F. GMEL., Syst. II. p. 1156 (1791)

Ascyrela, CHOISY, Prodr. Monogr. Hp. p. 44 (1821)

Hypericum erectum, THUNB., Fl. Jap. p. 296 (1784); SIEB. et ZUCC., Fl. Jap. Fam.
Nat. I. p. 162 (1845); BL., Mus. Bot. Lugd. Bat. II. p. 25 (1856); MIQ., in Ann.
Mus. Bot. Lugd. Bat. II. p. 259 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 56 (1875);
MAXIM., in Mém. Biolog. XI. p. 168 (1881); NAK., Fl. Kor. I. p. 94 (1909);
MATSUM., Ind. Pl. Jap. II. 2. p. 365 (1912); MIURA, List Pl. Manch. & Mong. p.
255 (1925); MASAMUNE, Prel. Rep. Yeg. Yak. p. 97 (1929); MAK. et NEM., Fl.
Jap. ed. 2. p. 747 (1931)

Syn. *Hypericum erectum*, THUNB. f. *Fauriei*, MIY. et MIYAKE, Fl. Saghal. p. 78
(1915)

Nom. Jap. *Otogirisô*

Leg. Ipse, Aug. 11, 1928.

Distr. Saghalien, South Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima,
Okinawa, Korea, Manchuria.

Note. Grows on open and sunny grasslands or by the roadside from the sea
level up to about 500 m.

Hypericum japonicum, THUNB., Fl. Jap. p. 295, t. 31 (1784); CHOISY, DC. Prodr. I.
p. 548 (1824); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 163 (1845); BENTH., Fl.
Hongk. p. 23 (1861); MIQ., Ann. Mus. Bot. Lugd. Bat. II. p. 259 (1866); DYER,
in HOOK. f. Fl. Brit. Ind. I. p. 256 (1874); FR. et SAV., Enum. Pl. Jap. I. p.
56 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 73 (1886); R. KELLER, in Bull.
Herb. Boiss. V. p. 637 (*Hypericineae Japonicae*) (1897); ITO et MATSUM., Tent.
Fl. Lutch. I. p. 320 (1899); DIELS, Fl. Cent. Chin. p. 476 (1900); MATSUM. et
HAY., Enum. Pl. Formos. p. 41 (1906); NAK., Fl. Kor. I. p. 96 (1909); GAGNEPAIN,
in LECOMTE Fl. Ind. Chin. I. 3. p. 281 (1909); DUNN et TUTCH., Fl. Kwang. &
Hongk. p. 42 (1912); KOIDZ., in Tokyo Bot. Mag. XL. p. 344 (1926); MASAMUNE,
Prel. Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 749 (1931)

Syn. *Hypericum Thunbergii*, FR. et SAV., Enum. Pl. Jap. II. p. 300 (1876)

Hypericum mutikum, MAXIM., in Mém. Biolog. XI. p. 171 (1881) p.p.

Nom. Jap. *Hime-otogiri*

Leg. Ipse, Sept. 3, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. It grows in somewhat wet ground especially in the rice fields.

Hypericum laxum, KOIDZ., in Tokyo Bot. Mag. XL. p. 344 (1926); MASAMUNE, Prel.

Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 750 (1931)

Syn. Brathys laxa, BL., Mus. Bot. Lugd. Bat. II. p. 19 (1852)

Hypericum japonicum, THUNB. *♀. tenuior*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 259 (1866)

Hypericum Yabei, LÉVL. et VNT., in Bull. Soc. Bot. Fr. p. 501 (1909); NAK., Fl. Kor. 1. p. 97 (1909); YAMAZUTA, List Manch. Pl. p. 191 (1930)

Hypericum Thunbergii, MATSUM., Ind. Pl. Jap. II. 2. p. 369 (1912)

Nom. Jap. *Kokeotogiri*

Leg. Ipse, April. 2, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria.

Note. The species is found in the same locality as the previous one. It has its southern limit in this island.

var. *hananoegoense*, MASAMUNE, var. nov.

Herbae electae rubidae ca. 2 cm altae, non ramosae.

Nom. Jap. *Hime-koke-otogiri*

Leg. Ipse, Hananoego, Aug. 30, 1926.

Note. The variety is restricted to this island, and is found in a swamp which develops in higher altitudes of the island.

Hypericum yakusimense, KOIDZ, Pl. Nov. Amami-Ôsima. p. 8 (1928); MASAMUNE,

| Names of Plants | Regions | | | | | | | | | |
|--|-----------------------|--------|---------|-------------|-----------------------|--------------|--------|--------|--------|-------|
| | Philippines Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | China |
| <i>Hypericum erectum</i> , THUNB. | | + | + | + | + | + | + | + | + | + |
| <i>Hypericum japonicum</i> , THUNB. | + | + | + | + | + | + | + | + | + | + |
| <i>Hypericum laxum</i> , KOIDZ. | | | | | + | + | + | + | + | |
| H. l. var. <i>hananoegoense</i> , MASAMUNE . . . | | | | | | | | | | |
| <i>Hypericum yakusimense</i> , KOIDZ. | | | | | | | | | | |
| Total | 5 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 2 |
| Percentage | 20 | 40 | 40 | 40 | 60 | 60 | 60 | 60 | 60 | 40 |
| (Southern elements 2) | | | | | (Northern elements 3) | | | | | |

Prel. Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 753 (1931)

Nom. Jap. Yakusima-ko-otogiri

Leg. Ipse, Jul. 7, 1928.

Note. An endemic plant: Grows from 600 m up to the highest point of the island.

Hypericum laxum has its southern limit in this island, and *Hypericum yakusimensis* has several related species like *H. hakonense* in northern lands. Thus the island has a much closer relationship with the northern regions than with the southern ones.

Violaceae

Violaceae, DC., in Lam. et DC. Fl. Fr. ed. 3. IV. p. 801 (1805)

Viola, [TOURN., ex LINN. Syst. ed. 1 (1735), Gen. ed. 1. p. 267 (1737)] et Sp. Pl. ed. 1. p. 933 (1753); GRING, in DC. Prodr. I. p. 291 (1824); ENDL., Gen. Pl. n. 5040 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 1. p. 117 (1862); REICH. u. TAUB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 334 (1895); BECKER, in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 21. p. 363 (1925)

Viola biflora, LINN., Sp. Pl. ed. 1. p. 936 (1753); GING, in Linn. I. p. 407 (1826); LEDEB., Fl. Alt. I. p. 261 (1829), et Fl. Ross. I. p. 254 (1842); TURCZAN., Fl. Baical-Dahur. p. 306 (1842); FR. et SAV., Enum. Pl. Jap. II. p. 290 (1876); MAXIM., in Mém. Biolog. IX. p. 749 (1876), et in Bull. Ac. Imp. Sc. St. Petr. XXIII. p. 334 (1877); KOM., Fl. Mansh. III. p. 70 (1907); NAK., Fl. Kor. I. p. 66 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 372 (1912); BECKER, Viol. Asiat. et Aust. III. p. 39 (1918); PRITZ., Veg. Siber.-Mong. Front. p. 329 (1921); KUDO, Fl. Paramush. p. 132 (1922); HULT., Fl. Kamtch. III. p. 128 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 755 (1931); TATEWAKI, Phytogeogr. Middl. Kuril. pp. 204, 253, et 282 (1932)

Syn. Viola biflora, LINN. α . *typica*, REGEL, Pl. Rad. p. 498 (1861)

Nom. Jap. Kibanano-komanotume

Leg. Ipse, Jun. 12, 1928.

Distr. Kuriles, Kamtchatka, Saghalien, Yezo, Honsyû, Korea, Manchuria.

Note. This violet is found in the Pseudosasa Owatarii Association in the alpine region of the island. It is not yet found in lands further south than this island. Judging by the distribution of this species the flora of the island is related to the northern floral regions which include the above mentioned localities.

Viola Boissieuana, MAK., in Tokyo Bot. Mag. XVI. p. 127 (1902); MATSUM., Ind. Pl. Jap. II. 2. p. 372 (1912); BECKER, Viol. Asia. & Austr. II. p. 410 (1917); MORI, Enum. Pl. Cor. p. 254 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 756 (1931)

Syn. Viola Selirkii, MAK., in Tokyo Bot. Mag. II. p. 252 (1888)

Nom. Jap. Hime-miyama-sumire

Leg. Ipse, Aug. 1928.

Distr. Sikoku, Kyûsyû, Korea.

Note. In the lauri-aciculisilvae the species is found as a sun loving plant, and is not reported further south than this island.

Viola grypceras, A. GRAY, in Narr. Perry. Exped. II. p. 308 (1856); FR. et SAV., Enum. Pl. Jap. I. p. 43 (1875), et II. p. 289 (1876); MORI, Enum. Pl. Cor. p. 255 (1922); BECK., Viol. Asiat. et Austr. IV. p. 40 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 97 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 759 (1931)

Syn. *Viola canina*, var. *japonica*, GING., in DC. Prodr. I. p. 298 (1824); A. GRAY, in Narr. Perry Exped. p. 308 (1856)

Viola canina, (non LINN.) SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 143 (1846)

Viola sylvatica, var. *imberbis*, A. GRAY, Bot. Jap. p. 382 (1858)

Viola Reichenbachiana, (non JORDAN) FR. et SAV., Enum. Pl. Jap. I. p. 42 (1875)

Viola Grayi, FR. et SAV., Enum. Pl. Jap. I. p. 43 (1875)

Viola Riviniana, (non REICHB.) FR. et SAV., Enum. Pl. Jap. I. p. 43 (1875)

Viola sylvestris a *grypceras*, MAXIM., in Mém. Biolog. IX. p. 743 (1876); ITO et MATSUM., Tent. Fl. Lutch. p. 41 (1899)

Viola longepedunculata, FR. et SAV., Enum. Pl. Jap. II. p. 286 (1876)

Viola sylvatica, (non FRIES) KANITZ, Anthoph. Jap. p. 25 (1878)

Viola sylvestris, KIT. var. *japonica*, MAK., in Tokyo Bot. Mag. XVI. p. 146 (1902)

Nom. Jap. *Tatitubo-sumire*

Leg. Ipse, Jul. 13, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Korea.

Note. The species is found in the lowlands and in the laurisilvae, especially plentiful near the forest edges.

var. *exilis*, NAK., in Tokyo Bot. Mag. XXXVI. p. 55 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 759 (1931)

Nom. Jap. *Ko-tati-sumire*

Leg. Ipse, Jul. 12, 1924.

Distr. Honsyû.

Note. The species is found along forest edges.

var. *yakusimensis*, MASAMUNE, var. nov. Folia ovata, apice acuto-acuminata ad summo obtusa, ca. 2 cm longa, 2 cm lata basi cordata.

Nom. Jap. *Yakusima-tatitubo-sumire*

Leg. Ipse, Jul. 6, 1928.

Distr. Endemica.

Note. Grows in open sunny places or on forest edges from the sea level up to about 600 m.

Viola Iwagawai, MAK., in Tokyo Bot. Mag. XXVI. p. 158 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 760 (1931)

Nom. Jap. *Yakusima-sumire*

Leg. Ipse, Jun. 6, 1926.

Distr. Endemica.

Note. This violet is found in somewhat damp spots in the lauri-aciculisilvae.

Viola japonica, LANGSD., ex. GING. in DC. Prodr. I. p. 295 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. IV. p. 218 (1869); MAXIM., in Mém. Biolog. IX. p. 724 (1876); FR. et SAV., Enum. Pl. Jap. II. p. 287 (1876); FORB. et HEMSL., Ind. Fl. Sin. I.

p. 53 (1885); PALIB., Consp. Fl. Kor. I. p. 32 (1898); ITO et MATSUM., Tent. Fl. Lutch. I. p. 40 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 29 (1906); HAY., Fl. Mont. Formos. p. 52 (1908); NAK., Fl. Kor. I. p. 73 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 375 (1912); BECK., Viol. Asia. & Aust. V. p. 155 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 760 (1931)

Syn. *Viola hamtschatica*, var. *pekinensis*, REGEL, Pl. Rad. I. p. 230 (1861)

Viola japonica, var. *pekinensis*, MAXIM., in Bull. Soc. Nat. Mosc. p. 4 (1879)

Nom. Jap. *Kosumire*

Leg. Ipse, April. 1, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China.

Note. Grows on forest edges of the laurisilvae and the lauri-aciculisilvae.

Viola mandshurica, W. BECK. var. *ciliata*, NAK., in Tokyo Bot. Mag. XXXVI. p.p. 60, et 92 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 762 (1931)

Syn. *Viola Patrini*, var. *Gmeliana*, (non ROEM. et SCHULT.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 152 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 41 (1875)

Viola Patrini, var. *chinensis*, (non GING) MAXIM., Mél. Biolog. IX. p. 722 (1876); MATSUM., Ind. Pl. Jap. II. 2. p. 377 (1912) p.p.

Nom. Jap. *Kesumire*

Leg. Ipse, Aug. 20, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea.

Note. The species is found in low lying waste lands.

Viola Maximowicziana, MAK., f. *rubescens*, MAK., in Tokyo Bot. Mag. XXVI. p. 151 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 763 (1931)

Nom. Jap. *Aka-komiyama-sumire*

Leg. Ipse, Nagata, Mart. 21, 1923.

Distr. Honsyû.

Note. The form is found as undergrows in the laurisilvae and in the lauri-aciculisilvae. It has its southern limit in this island.

f. *typica*, MAK., in Tokyo Bot. Mag. XXVI. p. 151 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 763 (1931)

Nom. Jap. *Komiyama-sumire*

Leg. Ipse, Jul. 10, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. This violet is found as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

Viola oblongo-sagittata, NAK., in Tokyo Bot. Mag. XXXVI. p. 37 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 764 (1931)

Syn. *Viola Patrini*, (non DC.) ITO et MATSUM., Tent. Fl. Lutch. p. 39 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 377 (1912) pl. ex Formosa.

Nom. Jap. *Ryûkyû-siro-sumire*

Leg. Ipse, Yosida, Mart. 21, 1923.

Distr. Amami-Ôsima, Okinawa, Taiwan.

Note. The species is found in low, open and waste lands and it has its northern limit in this island.

- Viola Okuboi**, MAK. var. *typica*, MAK., in Tokyo Bot. Mag. XVII. p. 85 (1903); MAK. et NEM., Fl. Jap. ed. 2. p. 765 (1931)
Syn. *Viola Keiskei*, var. *Okuboi*, MAK., in Tokyo Bot. Mag. XXVI. p. 133 (1902)
Viola Okuboi, MATSUM., Ind. Pl. Jap. II. 2. p. 376 (1912)
Viola pekinensis, BECK. var. *typica*, BECK., Viol. Asiat. & Aust. I. p. 252 (1916)
Nom. Jap. *Kemaruha-sumire*
Leg. Ipse, Kurio, Mart. 27, 1927.
Distr. Honsyû, Sikoku, Kyûsyû.
Note. The species is found in waste plains near the sea level.
- Viola phalacrocarpoides**, MAK., in Tokyo Bot. Mag. XXIII. p. 136 1909; MAK. et NEM., Fl. Jap. ed. 2. p. 766 (1932)
Syn. *Viola nipponica*, (non MAXIM.) MAK., in Tokyo Bot. Mag. XXI. p. 56 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 376 (1912)
Nom. Jap. *Oka-sumire*
Leg. Ipse, Yaegadake, Mart. 19, 1923.
Distr. Honsyû, Kyûsyû.
Note. The violet is found on rare occasion in the lauri-aciculisilvae, and has its southern limit in this island.
- Viola primulifolia**, LINN. var. *glabra*, NAK., in Bull. Soc. Bot. Franc. LXXII. p. 190 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 766 (1931)
Nom. Jap. *Siro-sumire*
Leg. Ipse, April. 1, 1927.
Distr. Yezo, Honsyû, Kyûsyû, Taiwan.
Note. Grows on grass lands near the sea level; rather common in Japan.
- Viola pseud-Selkirkii**, NAK., in Bull. Soc. Bot. France, LXXII. p. 195 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929)
Nom. Jap. *Yakusima-miyama-sumire*
Leg. Ipse, Jul. 10, 1928.
Distr. Endemica.
Note. Rarely found in the lauri-aciculisilvae at about a medium altitude.
- Viola Sieboldii**, MAXIM., in Mém. Biolog. IX. p. 729 (1876), et in Bull. Acad. Sc. Petersb. p. 320 (1877); FR. et SAV., Enum. Pl. Jap. II. p. 646 (1879); MAK., in Tokyo Bot. Mag. XVI. p. 127 (1902); BECK., Viol. Asiat. & Austr. VI. p. 149 (1923)
Syn. *Viola pumila*, (non BECK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929)
Nom. Jap. *Hime-siwai-sumire*
Leg. Ipse, Aug. 31, 1926.
Distr. Kyûsyû, Tanegasima.
Note. The species is found in the laurisilvae, and has its southern limit in this island.
- Viola Tashiroi**, MAK., in Tokyo Bot. Mag. XXI. p. 57 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 380 (1912); BECK., Viol. Asiat. & Austr. VI. p. 148 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 769 (1931)
Nom. Jap. *Yaeyama-sumire*
Leg. (fid. Makino et NEMOTO.)
Distr. Yaeyama.

| Names of Plants | Regions | | Philippines | Bonins | Taiwan | Okinawa | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamitchatka | Manchuria, Amur & Usuri | China |
|---|---------|--|-------------|--------|--------|---------|---------|------------|--------------|--------|--------|--------|-------|-------------------------|-----------|--------------------------------|-------------------------|-------|
| <i>Viola biflora</i> , LINN. | | | | | | | | | | | | + | + | + | + | + | + | |
| <i>Viola Boissieuana</i> , MAK. | | | | | | | | | + | + | | + | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|---|----|----|----|------------------------|----|----|----|----|----|----|---|----|---|--|--|--|--|--|---|--|
| <i>Viola grypoceras</i> , A. GRAY. | | + | | + | + | + | + | + | + | + | | | | | | | | | | |
| <i>V. g.</i> var. <i>exilis</i> , NAK. | | | | | | | | | + | | | | | | | | | | | |
| <i>V. g.</i> var. <i>yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | | |
| <i>Viola</i> Iwagawai, MAK. | | | | | | | | | | | | | | | | | | | | |
| <i>Viola japonica</i> , LANGSD. | + | + | | | | + | + | + | + | | | | | | | | | | + | |
| <i>Viola mandshurica</i> , W. BECK. var. <i>ciliata</i> , NAK. | | | | + | | + | + | + | + | + | | | | | | | | | | |
| <i>Viola Maximowicziana</i> , MAK. f. <i>rubescens</i> , MAK. | | | | | | | | | | + | | | | | | | | | | |
| <i>V. M.</i> f. <i>typica</i> , MAK. | | | | | | | | + | + | + | | | | | | | | | | |
| <i>Viola oblongo-sagittata</i> , NAK. | + | + | + | | | | | | | | | | | | | | | | | |
| <i>Viola</i> Okuboi, MAK. var. <i>typica</i> , MAK. | | | | | | | | + | + | + | | | | | | | | | | |
| <i>Viola phalacrocarpoides</i> , MAK. | | | | | | | | + | | + | | | | | | | | | | |
| <i>Viola primulifolia</i> , LINN. var. <i>glabra</i> , NAK. | + | | | | | | | + | | + | | + | | | | | | | | |
| <i>Viola pseud-Selkirki</i> , NAK. | | | | | | | | | | | | | | | | | | | | |
| <i>Viola Sieboldii</i> , MAXIM. | | | | | | | | + | + | | | | | | | | | | | |
| <i>Viola</i> Tashiroi, MAK. | | | + | | | | | | | | | | | | | | | | | |
| <i>Viola verecunda</i> , A. GRAY, var. <i>typica</i> , MAK. | + | | | | | + | + | + | + | + | + | | | | | | | | + | |
| <i>V. v.</i> var. <i>t. f. radicans</i> , MAK. | + | | | | | | | | | + | | | | | | | | | | |
| <i>Viola yakusimana</i> , NAK. | | | | | | | | | | | | | | | | | | | | |
| Total 20 | 5 | 4 | 2 | 3 | 10 | 7 | 12 | 6 | 5 | 2 | 1 | 2 | 1 | | | | | | | |
| Percentage | 25 | 20 | 10 | 15 | 50 | 35 | 60 | 30 | 25 | 10 | 5 | 10 | 5 | | | | | | | |
| (Southern elements 8) | | | | (Northern elements 14) | | | | | | | | | | | | | | | | |

From a study of the geographical distribution of the *Violaceous* plants indigenous to the island I reached the conclusion that the island is closely related to the northern lands, because several species have their southern limit of habitat in this island.

Flacourtiaceae

Flacourtiaceae, DUMORT, Ansl. Famil. p. 44. (1829)

- Xylosma*, FORSTER f., Fl. Ins. Austral. Prodr. p. 72 (1786) nomen; WILLD., Sp. Pl. IV. p. 834 (1804); ENDL., Gen. Pl. Supp. I. p. 1421 no. 5081/1 (1840); BENTH. et HOOK. f., Gen. Pl. I. p. 128 (1862)
Syn. Apactis, THUNB., Nov. Gen. Pl. III. p. 66 (1783), et Fl. Jap. p. 191 (1784); POIR., Supp. Encycl. I. p. 404 (1810)

Myroxylon, (non LINN.) FORSTER, Charct. p. 125. t. 63 (1776); JUSS., Gen. Pl. p. 444 (1789); O. KUNTZE, Rev. Gen. Pl. I. p. 44 (1891); WARB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. a. p. 39 (1894)

Xylosma Apactis, KOIDZ., in Tokyo Bot. Mag. XXXIX. I. p. 316 (1925); NAK., Fl. Sylv. Kor. XVII. p. 51. t. XIV. (1928); MAK. et NEM., Fl. Jap. ed. 2. p. 773 (1931)

Syn. *Apactis japonica*, THUNB., Nov. Gen. Pl. II. p. 66 (1783), et Fl. Jap. p. 191 (1784); WILLD., Sp. Pl. II. p. 845 (1799); PERSOON, Syn. Pl. II. p. 2 (1805); POIR., Supp. Encycl. I. p. 404 (1810); SPRENG., Syst. II. p. 460 (1825); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929)

Croton congestum, LOUR., Fl. Cochinch. p. 582 (1790)

Hisingera racemosa, (non PRESL.) SIEB. et ZUCC., Fl. Jap. I. p. 169, tt. 88 et 100 (1841)

Flacourtia japonica, WALPERS, Rep. I. p. 205 (1842)

Hisingera japonica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 168 (1845)

Xylosma japonica, A. GRAY, Bot. Jap. p. 381 (1858); HANCE, in SEEM. Journ. Bot. VIII. p. 275 (1870), et New Ser. VII. p. 8 (1878); YAMAMOTO, Suppl. Ic. Pl. Formos. III. p. 43 (1927)

Xylosma racemosa, MIQ., in Ann. Mus. Bot. Lugd. Bot. II. p. 155 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 43 (1875); ITO et KAKU, Fig. et Descri. Pl. Koishik. II. t. 11 (1884); MAXIM., in ENGL. Bot. Jahrb. VI. p. 58 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 57 (1886); MATSUM., Ind. Pl. Jap. II. 2. p. 382 (1912)

Myroxylon racemosum, O. KUNTZE, Rev. Gen. Pl. I. p. 44 (1891)

Myroxylon japonicum, MAK., in Tokyo Bot. Mag. XVIII. p. 53 (1904); MAK. et NEM., Fl. Jap. ed. 1. p. 520 (1925)

Xylosma congestum, MERR., in Philipp. Journ. Sc. XV. p. 247 (1919)

Nom. Jap. *Kusudoige*

Leg. (fid. Z. Tashiro.)

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. It is reported to be found in lowlands.

Idesia, MAXIM., in Bull. Acad. St.-Petersb. X. p. 485 (1866), et in Mém. Biolog. VI. p. 19 (1866); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 3. p. 972 (1867); WARB., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. a. p. 45 (1893); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 21. p. 444 (1925); LEMÉE, Dict. Gen. Pl. Phan. III. p. 740 (1931)

Syn. *Polycarpa*, LINDEN, ex CARRIÈRE, in Rev. Hort. p. 330 (1858)

Idesia polycarpa, MAX., in Bull. Acad. Petersb. X. p. 485 (1866), et in Mém. Biolog. VI. p. 19 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 45 (1875); HOOK., in Bot. Mag. t. 6794 (1885); ITO et MATSUM., Tent. Fl. Lutch. I. p. 42 (1899); DIELS, Fl. Centr. Chin. p. 478 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 32 (1906); HAY., Fl. Mont. Formos. p. 54 (1908); SCHNEID., Ill. Handb. Laubh. II. p. 360 f. 241 g. et 242 (1909); SHIRASAWA, Ic. For. Tree. Jap. ed. 2. I. p. 210, t. 76 f. 1-16 (1911); HAY., Ic. Pl. Formos. I. p. 62 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 382 (1912); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. 2. auf. B. 21. p. 444 (1925); NAK., Fl. Sylv. Kor. XVII. p. 54 t. XV. (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 98 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 773 (1931); HANDEL-MAZZ., Symb. Sin. VII. p. 383 (1931)

Syn. *Polycarpa Maximowiczii*, LINDEN, ex CARRIERE, in Rev. Hort. XL. p. 330, f. 26 (1868)

Nom. Jap. *Iigiri*

Leg. Ipse, Kosugidani, Sept. 4, 1926.

Dist. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, China.

Note. The species occurs from the sea level up to about 700 m and especially in the laurisilvae and in the lauri-aciculisilvae.

| Names of Plants | Regions | | | | | | | | | | | |
|----------------------------------|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| Xylosma Apactis, KOIDZ. | + | + | + | + | + | + | + | + | + | + | + | + |
| Idesia polycarpa, MAXIM. | + | + | + | + | + | + | + | + | + | + | + | + |

In respect of this family the island shows no special affinity with either northern or southern floral regions.

Stachyuraceae

Stachyuraceae, GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. a. p. 192 (1893)

Stachyurus, SIEB. et ZUCC., Fl. Jap. I. p. 42, t. 18 1836 ; BENTH. et HOOK. f., Gen. Pl. I. 1. p. 184 (1862) ; GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. a p. 193 (1893)

Stachyurus lancifolius, KOIDZ., in Tokyo Bot. Mag. XXXII. p. 135 (1918) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 99 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 773 (1931)

Syn. *Stachyurus praecox*, (non SIEB. et ZUCC.) ITO et MATSUM., Tent. Fl. Lutch. I. p. 60 (1899)

Nom. Jap. *Nanban-kibusi*

Leg. Ipse, Kurio, Jul. 18, 1928.

Dist. Amami-Ôsima.

Note. The species is found along the forest edges of the laurisilvae, and in open grassland near the sea level, and is restricted to this island and Amami-Ôsima.

| Name of Plant | Regions | | |
|--|-------------------------------|---|---------|
| | | | |
| | Philippines | | |
| | Bonins | | |
| | Taiwan | | |
| | Okinawa | | Ryūkyūs |
| | Amami-Ōshima | | |
| | Tanegasima | | |
| | Kyūsū Prop. | | Kyūsū |
| | Sikoku | | |
| | Honsyū | | |
| | Korea | | |
| | Yezo & Southern Kuriles | | |
| | Saghalien | | |
| | Northern Kuriles & Kamichatka | | |
| | Manchuria, Amur & Ussuri | | |
| | China | | |
| <i>Stachyurus lancifolius</i> , KOIDZ. | | + | |

In respect of this family, the island has an intimate relationship with Amami-Ōshima so far as its phytogeographical position is concerned.

Daphnaceae

Daphnaceae, J. ST. HILAIRE, Expos. I. p. 180 (1835)

Syn. Thymelaceae, REICHB., Nom. p. 64 (1841)

Daphne, [TOURN., ex LINN. Syst. ed. 1. 1735]
et Sp. Pl. ed. 1. p. 356 (1753); JUSS., Gen. Pl. p. 77 (1789); ENDL., Gen. Pl. p.
330, n. 2092 (1836-40); MEISSN., in DC. Prodr. XIV. p. 530 (1847); BENTH. et
HOOK. f., Gen. Pl. III. 1. p. 190 (1880); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam.
III. vi. a. p. 237 (1894); LEMÉE, Dict. Gen. Pl. Phan. II. p. 501 (1930)

Syn. *Thymelaea*, ADANS., Fam. II. p. 285 (1763)

Scopolia, LINN. f., Supp. p. 60 (1781)

Daphne kiusiana, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 134 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 405 (1875); MAXIM., in Mém. Biolog. XII. p. 542 (1886); NAK., Fl. Sylv. Kor. XVII. p. 43 t. XI. (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 99 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 782 (1931)

Syn. *Daphne odora*, THUNB., Fl. Jap. p. 159 (1784)

Daphne sinensis, (non LAM.) MAXIM, in Bull. Acad. St. Petersburg. XXXI. p. 101 (1886), et in Mém. Biolog. p. 542 (1886)

Daphne cannabina, (non WALL.) MAK., in Tokyo Bot. Mag. XI. p. 5 (1897);
MATSUM., Ind. Pl. Jap. II. 2, p. 387 (1912)

Daphne odora, var. *kiusiana*, KEISSLER, in Engl. Bot. Jahrb. XXV. p. 89 (1898)

Nom. Jap. Kosyónoki

Leg. Ipse, Kosugidani, Mart. 18, 1923.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea.

Note. The shrub abounds at about 600 m above the sea level, and is found as undergrowth in the laurisilvae.

Wikstroemia yakushimensis, (MAK.) NAK., ex MASAMUNE, Prel. Rep. Veg. Yak. p. 99 (1929)

Syn. *Wikstroemia pauciflora*, FR. et SAV. var. *yakushimensis*, MAK., in Tokyo Bot. Mag. XXIV. p. 52 (1910); MAK. et NEM., Fl. Jap. ed. 2. p. 784 (1931)

Nom. Jap. *Sima-sakura-gampi*

Leg. Ipse, Nakama, Aug. 10, 1928.

Distr. Kyûsyû.

Note. The species is found in somewhat wet but sunny spots from about 500 m up to 1100 m and it is restricted to this island and Kyûsyû.

Wikstroemia Kudo is an endemic and characteristic species which stands between *Wikstroemia* and *Daphne*. From this point of view the island is separated from the neighbouring districts. And since *Wikstroemia yakushimensis* is restricted to this island and Kyûsyû, the island has some relationship with Kyûsyû. The remaining one species of *Wikstroemia* has its southern limit in this island. From these facts the island appears to be less related to the southern lands in respect of this family than to the northern ones.

Elaeagnaceae

Elaeagnaceae, LINDL., Nat. Syst. ed. 2. p. 194 (1836)

Elaeagnus, [TOURN., ex LINN. Syst. ed. 1. (1735)

et Sp. Pl. ed. 1. p. 121 (1753); ADANS., Fam. II. p. 80 (1763; ENDL., Gen. Pl. p. 334 n. 2115 (1836-40); SCHLECHT., in DC. Prodr. XIV. p. 608 (1857; BENTH. et HOOK. f., Gen. Pl. III. p. 204 (1880); GILG., in ENGL. u. PRANTL Nat. Pfl.-fam. III. vi. a. p. 249 (1894); LEMÉE, Dict. Gen. Pl. Phan. II. p. 811 (1930)

Syn. *Octarillum*, LOUR., Fl. Cochinch. p. 90 (1790)

Elaeagnus crispa, THUNB. var. *typica*, NAK., Fl. Sylv. Kor. XVII. p. 10 t. 1. (1928; MASAMUNE, Prel. Rep. Veg. Yak. p. 100 (1929; YAMAZUTA, List Manch. Pl. p. 199 (1930)

Syn. *Elaeagnus umbellata*, THUNB., Fl. Jap. p. 66 (1784); SPRENG., Syst. Veg. I. p. 489 (1825); SIEB., Synop. Oec. p. 22 (1830); A. GRAY, in Narr. Perry Exp. II. app. p. 318 (1856); SCHLECHT., in DC. Prodr. XIV. p. 614 (1857), et in Linnaea XXX. p. 377 (1859); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 138 (1867); MAXIM., in Mém. Biolog. VII. p. 560 (1870); FR. et SAV., Enum. Pl. Jap. I. p. 408 (1875); KOM., Fl. Mansh. III. p. 82 (1907); NAK., Fl. Kor. II. p. 179 (1911) p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 392 (1912) p.p.

Elaeagnus crispa, THUNB., ex MURRAY, Syst. Veg. p. 163 (1784; THUNB., Fl. Jap. p. 66 (1784); POIRET, Supp. Encycl. II. p. 185 (1809; BL., Bijdr. p. 639 (1825); SCHLECHT., in DC. Prodr. XIV. p. 614 (1857), et in Linnaea. XXX. p. 378 (1859); MAK. et NEM., Fl. Jap. ed. 2. p. 785 (1931)

Elaeagnus umbellata, var. *typica*, SCHNEID., Ill. Handb. Laub. II. p. 411. f. 279 x-z f. 280 f. i (1909)

Nom. Jap. *Aki-gumi*

Leg. Ipse, Aug. 6, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, Manchuria.

Note. The species is found in open waste lands, especially in sunny spots, at low altitudes.

var. *rotundifolia*, (MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 100 (1929)

Syn. *Elaeagnus umbellata*, THUNB. var. *rotundifolia*, MAK., in Tokyo Bot. Mag. VIII. p. 302 (1894); MATSUM., Ind. Pl. Jap. II. p. 392 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 790 (1931)

Nom. Jap. *Maruba-akigumi*

Leg. Ipse, Aug. 18, 1928.

Distr. Honsyû, Kyûsyû.

Note. The species is found near the sea shore, and is not found in lands further south than this island.

var. *subcoriacea*, NAK. et MASAMUNE, in Tokyo Bot. Mag. XLIII. p. 443 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 100 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 785 (1931)

Nom. Jap. *Atuba-akigumi*

Leg. Ipse, Kurio, Jul. 4, 1927.

Distr. Endemica.

Note. The variety grows on rocky littoral ground.

Elaeagnus glabra, THUNB., Fl. Jap. p. 67 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 138 (1867); MAXIM., in Mém. Biolog. VII. p. 561 (1870); FR. et SAV. Enum. Pl. Jap. I. p. 409 (1875); FORB. et HEMSLE., Ind. Fl. Sin. II. p. 402 (1894); MATSUM. et HAY., Enum. Pl. Formos. p. 356 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 390 (1912); MORI, Enum. Pl. Cor. p. 259 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 99 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 785 (1931)

Nom. Jap. *Turu-gumi*

Leg. Ipse, Jul. 29, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. The species is found in littoral forests from the sea level up to 1000 m and is common in South Japan.

Elaeagnus macrophylla, THUNB., Fl. Jap. p. 67 (1784); WILLD., Sp. Pl. I. p. 690 (1797); POIR., Supp. Encycl. I. p. 187 (1809); GRAY, Pl. Jap. p. 318 (1856); SHLECHT., in DC. Prodr. XIV. p. 614 (1857), et in Linnaea, XXX. p. 380 (1859); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 137 (1867); MAXIM., in Mém. Biolog. VII. p. 560 (1870); FR. et SAV., Enum. Pl. Jap. I. p. 408 (1875); DIPPEL, Handb. Laubh. III. p. 210, f. 112 (1893); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. III. vi. p. 251 (1894); SCHNEIDER, III. Handb. Laubh. II. p. 415, f. 281, a-c f. 282 g-h (1909); NAK., Fl. Kor. II. p. 179 (1911); MATSUM., Ind. Pl. Jap. II. p. 391 (1912); NAK., Fl. Sylv. Kor. XVII. p. 16, t. 4 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 99 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 787 (1931)

Nom. Jap. *Ôba-gumi*

Leg. Ipse, Kurio, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Korea.

Note. The species is predominant in littoral forests, and is rather common in South Japan.

| Names of Plants | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|---------|------------|-------------|-------|---|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsū Prop. | Kyūsū | |
| <i>Elaeagnus crista</i> , THUNB. var. <i>typica</i> , NAK. . | | | | + | | + | + | + | + | |
| <i>E. c.</i> var. <i>rotundifolia</i> , MASAMUNE | | | | | | | | + | | |
| <i>E. c.</i> var. <i>subcoriacea</i> , NAK. et MASAMUNE . | | | | | | | | | + | |
| <i>Elaeagnus glabra</i> , THUNB. | | + | + | + | | + | + | + | + | |
| <i>Elaeagnus macrophylla</i> , THUNB. | | | | + | | | + | + | + | + |

(1840); HOOK. f., *Lc. Pl.* t. 362 (1841); MIQ., *Fl. Ind. Bat.* I. 1. p. 585 (1855); BENTH., *Fl. Hongk.* p. 110 (1861); HENSLOW, in HOOK. f. *Fl. Brit. Ind.* II. p. 437 (1879); FORB. et HEMSL., *Ind. Fl. Sin.* I. p. 293 (1887); SAIDA, in *Tokyo Bot. Mag.* III. tt. 14 et 15 (1889); MATSUM, in *Tokyo Bot. Mag.* XI. p. 77 (1897), et *Ind. Pl. Jap.* II. 2. p. 398 (1912); KING, in *Journ. As. Soc. Beng.* LXVI. 2. p. 317 (1897); ITO et MATSUM., *Tent. Fl. Lutch.* I. p. 473 (1899); MATSUM. et HAY., *Enum. Pl. Formos.* p. 140 (1906); RIDL., *Fl. Malay. Penin.* II. p. 694 (1922); MASAMUNE, *Prel. Rep. Veg. Yak.* p. 100 (1929); MAK. et NEM., *Fl. Jap.* ed. 2. p. 796 (1931)

Alangium, LAM., Encycl. I. p. 174, (1783); DC., Prodr. III. p. 203 (1828); ENDL., Gen. Pl. n. 6096 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. 3. p. 949 (1867); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 260 (1897); LEMÉE, Dict. Gen. Pl. Phan. I. p. 136 (1929)

Syn. *Angolan*, ADANS., Fam. II. p. 85 (1763)

Stylidium, LOUR., Fl. Cochinch. p. 220 (1790)

Stylis, POIR., Encycl. Supp. V. p. 260 (1817)

Alangium chinense, REHDER, in SARGENT, Pl. Wil. II. p. 552 (1916); MERR., Enum. Hainan Pl. p. 141 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 101 (1929)

Syn. *Stylidium chinense*, LOUR., Fl. Cochinch. p. 221 (1790)

Marlea begoniifolia, ROXB., Hort. Beng. p. 28 (1814) nomen, et Fl. Ind. ed. 2 II. p. 261 (1832); DC., Prodr. IV. p. 267 (1830); LINDL., in Bot. Reg. XXIV. t. 61 (1838); BENTH., Fl. Hongk. p. 138 (1861); BRANDIS, Forest Fl. Brit. Ind. p. 251 (1874), et Ind. Trees p. 355 (1906); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 743 (1879); FORB. et HMESL., Ind. Fl. Sin. I. p. 344 (1887)

Stylis chinensis, POIR., Encycl. Supp. V. p. 260 (1817)

Styrax javanicum, BL., Bijdr. p. 67 (1825), DC., Prodr. VIII. p. 268 (1844)

Alangium begoniifolium, BAILL., Hist. Pl. VI. p. 270 (1877); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 261 (1898); MATSUM., Ind. Pl. Jap. II. 2. p. 398 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 797 (1931)

Nom. Jap. *Sima-urinoki*

Leg. Ipse, Yudomari, Aug. 1927.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is found on rare occasions at low altitudes. It occurs extremely rarely in the southern part of Kyûsyû (Penn. Sata' and Tanegasima, but rather frequently in Okinawa and Formosa. Thus the island shows a greater relationship to the southern lands than to the northern ones.

| Regions | | | | | | | | | | | | |
|---|-------------|--------|---------|-------------|------------|--------------|--------|--------|-------|-------------------------|-----------|------------------------------|
| | Philippines | | | Ryûkyûs | | | Kyûsyû | | | | | |
| Name of Plant | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Usuri |
| <i>Alangium chinense</i> , REHDER | | + | + | + | + | + | | | | | | + |

Alangium is the only indigenous representative genus of *Alangia-ceae* in this island, and it is found both in the northern and southern lands beyond Yakusima. Thus the island reveals no special affinity

either with the southern or with the northern regions in respect of this single genus. But so far as *Alangium chinensis* is concerned, we find that the island has some affinity with the southern lands.

Myrtaceae

Myrtaceae, PERS., Synops. II. p. 24 (1807)

Eugenia, [MICH., ex LINN. Syst. ed. 1. (1735)]
et Sp. Pl. ed. 1. p. 470 (1753) p.p.; ENDL., Gen. Pl. n. 6323 (1836-40) p.p.; BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 718 (1865) p.p.; NIEDENZU, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 78 (1893) p.p.; LEMÉE, Dict. Gen. Pl. Phan. III. p. 36 (1931) p.p.

Syn. *Jambosa*, [RUMPH., Herb. Amb. I. p. 121 (1741)] DC., Prodr. III. p. 286 (1828); ENDL., Gen. Pl. n. 6324 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 718 (1865); NIEDENZU, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 83 (1893)

Jambolifera, HOUTT., Handleid. II. p. 272 (1774)

Rugenia, NECK., Elem. II. p. 78 (1790)

Eugenia Jambos, LINN., Sp. Pl. ed. 1. p. 470 (1753); ROXB., Fl. Ind. II. p. 494 (1832); DUTHIE, in HOOK. f. Fl. Brit. Ind. II. p. 474 (1878); FORB. et HEMSL., Ind. Fl. Sin. I. p. 297 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 486 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 143 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 401 (1912); MERR., Enum. Hainan Pl. p. 136 (1927); CHUN., Cat. Tree. & Shrub. Chin. p. 184 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 101 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 801 (1931)

Syn. *Jambosa vulgaris*, DC., Prodr. III. p. 286 (1828); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 188 (1833); Bot. Mag. t. 3356 (1834); BENTH., Fl. Hongk. p. 120 (1861); WIGHT, Ic. Pl. Ind. Or. t. 435 (1843); BL., Mus. Bot. Lugd. Bat. I. p. 93 (1851)

Nom. Jap. *Hutomomo*

Leg. Ipse, Mugio, Mart. 23, 1923.

Distr. Okinawa, Taiwan, China.

Note. The species is frequently found on the southern side near the sea level. It is uncertain whether this species is an introduced one or not, but since it seems to be indigenous to the island, I have treated it as an indigenous species. It has its northern limit in this island.

Syzygium, GAERTN., Fruct. I. p. 166. t. 33 (1788);
BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 719 (1865); NIEDENZU, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 85 (1893)

Syn. *Opa*, LOUR., Fl. Cochinch. p. 308 (1790)

Microjambosa, BL., Mus. Bot. Lugd. Bat. I. p. 117 (1849)

Syzygium microphyllum, GAMBEL, Fl. Madras p. 479 (1919)

Syn. *Eugenia microphylla*, ABEL, Narr. Journ. Chin. p. 364 (1818); CHUN., Cat. Tree. & Shrub. Chin. p. 184 (1924); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 260 (1930)

Syzygium buxifolium, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 187 (1833);

MASAMUNE, Prel. Rep. Veg. Yak. p. 101 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 803 (1931)

Eugenia sinensis, HEMSL., in FORB. et HEMSL. Ind. Fl. Sin. I. p. 298 (1887);

ITO et MATSUM., Tent. Fl. Lutch. I. p. 481 (1899); MATSUM. et HAY.,

Enum. Pl. Formos. p. 143 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 401 (1912)

Nom. Jap. *Adeku*.

Leg. Ipse, Kosugidani, Aug. 10, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China.

Note. The species is found in the laurisilvae or in the lower part of the lauriculiculisilvae.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|--------|-------|-------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles |
| <i>Eugenia Jambos</i> , LINN. | | + | + | | | | | | | | | |
| <i>Syzygium microphyllum</i> , GAMBEL | + | + | + | + | + | + | + | | | | | + |
| | | | | | | | | | | | | China |

Eugenia is not found in more northern lands than Yakusima and *Syzygium* is found in both northern and southern lands. As the representatives of the latter genus are plentiful in the southern lands, the flora of the island has some close relationship with the southern lands in respect of this family.

Melastomataceae

Melastomataceae, R. BR., in Tuckey, Congo, App. V. p. 434 (1818)

Melastoma, [BOURM., ex LINN. Gen. Pl. ed. 1. p. 127 (1737)] et Sp. Pl. ed. 1. p. 389 (1753); ENDL., Gen. Pl. n. 6219 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 746 (1867); KRASSER, in ENGL. u. PRANT. Nat. Pl.-fam. III. vii. p. 153 (1893); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 377 (1932)

Sny. *Benkara*, ADANS., Fam. II. p. 85 (1763)

Melastoma candidum, DON, in Mem. Wern. Soc. IV. p. 288 (1823); DC., Prodr. III. p. 145 (1828); FORB. et HEMSL., Ind. Fl. Sin. I. p. 299 (1887); COGN., in DC.

Monogr. Phan. VII. p. 347 (1891); ITO et MATSUM., Tent. Fl. Lutch. I. p. 485 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 146 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 403 (1912); MERR., Enum. Philipp. III. p. 185 (1923)

Syn. *Melastoma macrocarpum*, D. DON, in Mem. Wern. Soc. VI. p. 289 (1823); FR. et SAV., Enum. Pl. Jap. I. p. 116 (1875) in adnot.; BENTH., Fl. Hongk. p. 113 (1861)

Melastoma calycinum, BENTH., in Hook. Lond. Journ. Bot. I. p. 485 (1842)

Melastoma Nobotan, BL., in Mus. Bot. Lugd. Bat. I. p. 54 (1849)

Melastoma candidum, D. DON, var. *Nobotan*, MAK., in Journ. Jap. Bot. III. p. 40 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 101 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 805 (1931)

Nom. Jap. *Nobotan*

Leg. Y. KUDO! Aug. 1907.

Distr. Amami-Ōshima, Okinawa, Taiwan, Bonins, China, Philippines.

Note. Dr. KUDO told me that he had once collected this species in the island, and so far as the present state of my knowledge is concerned, this plant has its northern limit in this island.

Osbeckia, LINN., Sp. Pl. ed. 1. p. 345 (1753);

ENDL., Gen. Pl. n. 6221 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 744 (1867); KRASSER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 155 (1893);

LEMÉE, Dict. Gen. Pl. Phan. IV. p. 923 (1932)

Syn. *Kadali*, ADANS., Fam. II. p. 234 (1763)

Osbeckia chinensis, LINN., Sp. Pl. ed. 1. p. 345 (1753); LOUR., Fl. Cochinch. p. 228 (1790); DC., Prodr. III. p. 141 (1824); Bot. Mag. t. 4026 (1843); BENTH., Fl. Hongk. p. 114 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 200 (1867); TRIANA, in Trans. Linn. Soc. XXVIII. p. 53 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 165 (1875); CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 515 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 299 (1887); COGN., in DC. Monogr. Phan. VII. p. 325 (1891); ITO et MATSUM., Tent. Fl. Lutch. I. p. 217 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 145 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 403 (1912); MERR., Enum. Hainan Pl. p. 128 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 101 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 805 (1931)

Syn. *Osbeckia angustifolia*, DON, Prodr. Fl. Nep. p. 221 (1825); DC., Prodr. III. p. 142 (1828); BL., Mus. Bot. Lugd. Bat. I. p. 50 (1849)

Tristemma angustifolium, BL.; DC., Prodr. III. p. 144 (1828)

Osbeckia linearis, BL., in Flora. XIV. p. 473 (1831), et Mus. Bot. Lugd. Bat. I. p. 51, f. 19 (1849); MIQ., Fl. Ind. Bat. I. p. 519 (1855)

Osbeckia myrtifolia, BL., Mus. Bot. Lugd. Bat. I. p. 51 (1849)

Osbeckia japonica, NAUD., in Ann. Soc. Nat. Sér. III. XIV. p. 70 (1850)

Nom. Jap. *Hime-nobotan*

Leg. Ipse, Ambō. Aug. 12, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Okinawa, Taiwan, China, Philippines.

Note. The species is found in waste lands at low altitudes, and is common in South Japan.

Bredia, BL., Mus. Bot. Lugd. Bat. I. p. 24, f. 4

(1849); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 753 (1867); KRASSER, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 170 (1893); LEMÉE, Dict. Gen. Pl. Phan. I. p. 670 (1929)

Leg. Ipse, Ambô. Jul. 21, 1927.

Distr. Amami-Ôsima, Okinawa, Taiwan, China, Eastern India.

Note. The species is found in the laurisilvae or in the lower part of the lauriculiculisilvae, and has its northern limit in this island.

Blastus, *Bredia*, and *Melastoma* have their northern limit in this island and all three genera are found in the southern lands beyond Yakusima. Thus the island is included in the floral regions of Ryûkyû and Formosa, so far as the plants of *Melastomataceae* are concerned.

Circaeaceae

Circaeaceae, LIND., Synop. p. 109 (1829)

Syn. *Ongaraceae*, LINDL., Nat. Syst. ed. 2. p. 35 (1836) p.p.; RAIMANN, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 199 (1893) p.p.

Ludwigia, [LINN., Coroll. Gen. p. 3 (1737)] et Sp. Pl. ed. 1. p. 118 (1753); DC., Prodr. III. p. 60 (1828); ENDL., Gen. Pl. p. 1189 n. 6110 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 788 (1867); RAIMANN, in ENGL. u. PRANT. Nat. Pfl.-fam. III. vii. p. 208 (1893)

Syn. *Ludwigia*, BURM., Fl. Ind. p. 36 (1768); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 185 (1932)

Nematopyxis, MIQ., Fl. Ind. Bat. I. p. 600 (1855)

Ludwigia prostrata, ROXB., Hort. Beng. p. 11 (1814) nom., et Fl. Ind. I. p. 420 (1832); DC., Prodr. III. p. 59 (1828); WIGHT, Ic. Pl. Ind. Or. t. 762 (1843-45); FR. et SAV., Enum. Pl. Jap. I. p. 169 (1875); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 588 (1879); FORB. et HEMSL., Ind. Fl. Sin. I. p. 309 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 500 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 155 (1906); KOM., Fl. Mansh. III. p. 87 (1907); NAK., Fl. Kor. I. p. 239 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 413 (1912); MERR., Enum. Philipp. Pl. III. p. 139 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 813 (1931)

Syn. *Ludwigia diffusa*, HAM., in Trans. Linn. Soc. XIV. p. 301 (1824)

Nematopxis prostrata, MIQ., Fl. Ind. Bat. I. i. p. 630 (1855)

Ludwigia epilobioides, MAXIM., Prim. Fl. Amur. p. 104 (1859)

Nematopyxis japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 95 (1867)

Nom. Jap. *Tyôzi-tade*

Leg. Ipse, Aug. 11, 1928.

Distr. Honsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, Indo-China.

Note. The species is found on wet ground near the sea level, and is common in Japan.

Circaea, [TOURN., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 3 (1737)] et Sp. Pl. ed. 1. p. 9 (1753); ENDL., Gen. Pl. n. 6130

Fatsia, DECNE. et PLANCH., in Rev. Hort. 4 sér. III. p. 105 (1854); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 11 (1863); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 939 (1867); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 33 (1894); LEMÉE, Dict. Gen. Pl. Phan. III. p. 96 (1931)

Fatsia japonica, DECNE. et PLANCH., Rev. Hort. p. 105 (1854); SEEM., in Journ. Bot. III. p. 176 (1865); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 158 (1866); K. KOCH, Dendr. I. p. 677 (1869); FR. et SAV., Enum. Pl. Jap. I. p. 194 (1875); DIPPEL, Handb. Laubholz. III. p. 239 (1893); ITO et MATSUM., Tent. Fl. Lutch. I. p. 535 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 419 (1912); ROLFE, in Bot. Mag. t. 8638 (1915); NAK., in Journ. Arnold. Arb. V. p. 16 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 102 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 820 (1931)

Syn. *Aralia japonica*, THUNB., Fl. Jap. p. 128 (1784); WILLD., Sp. Pl. I. p. 1519 (1797); SPRENG., Syst. Veg. I. p. 951 (1825); DC., Prodr. IV. p. 258 (1830); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 200 (1845)

Nom. Jap. *Yatude*

Leg. Ipse, Issô, Aug. 12, 1928.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species is found in the laurisilvae at low altitudes.

Agalma, MIQ., Fl. Ind. Bat. I. p. 751, t. 11 (1855);

NAK., in Journ. Arnold. Arb. V. p. 19 (1924)

Syn. *Sciadaphyllum*, P. BR., Hist. Jam. p. 190, t. 19 (1756)

Schefflera, FORST, Char. Gen. p. 45, t. 33 (1776); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 940 (1857); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 35 (1894)

Heptapleurum, GAERTN., Fruct. II. p. 472, t. 178 (1791)

Sciadaphyllum, BL., Bijdr. p. 875 (1826)

Agalma lutchuense, NAK., in Journ. Arnold. Arb. V. p. 20 (1924)

Syn. *Heptapleurum octophyllum*, FORB. et HEMSL., Ind. Fl. Sin. I. p. 342 (1887) pl. ex Formos.; MATSUM. et HAY., Enum. Pl. Formos. p. 178 (1906); HAY., Fl. Mont. Formos. p. 107 (1908) p.p., et Ic. Pl. Formos. II. p. 60 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 822 (1931)

Schefflera octophylla, (non HARMS) ITO et MATSUM., Tent. Fl. Lutch. I. p. 537 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 422 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 102 (1929)

Nom. Jap. *Hukanoki*

Leg. Ipse, Nagatadake, Aug. 22, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. The species grows in the laurisilvae near the sea level.

Gilibertia, RUIZ. et PAV., Fl. Peru. et Chil.

Prodr. p. 50, t. 8 (1794); DC., Prodr. IV. p. 255 (1830); ENDL., Gen. Pl. n. 4554 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 944 (1867); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 40 (1894); NAK., in Journ. Arnold. Arb. V. p. 22 (1924)

Syn. *Ginannia*, F. G. DIETR., Vollst. Lex. Gaertn. IV. p. 357 (1804)

Dendropanax, DECNE. et PLANCH., in Rev. Hort. 4 sér. III. p. 107 (1854); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 26 (1863); BENTH. et HOOK. f., Gen. Pl. I. p. 943 (1876)

Textoria, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 12 (1863)

Gilibertia trifida, MAK., in Tokyo Bot. Mag. XV. p. 91 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 419 (1912); MORI, Enum. Pl. Cor. p. 266 (1922); NAK., in Journ. Arnold. Arb. V. p. 23 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 102 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 821 (1931)

Syn. *Acer trifidum*, THUNB., Fl. Jap. p. 163 (1784); WILLDN., Sp. Pl. IV. p. 991 (1806); DC., Prodr. I. p. 595 (1824); SPRENG., Syst. Veg. II. p. 224 (1825)

Hedera japonica, JUNGH., in Hoen. & De Vriese, Tijdschr. VII. p. 307 (1840)

Fatsia mitsude, DE VRIESE, C. KOCH et FINET, Wochenschr. II. p. 371 (1859)

Textoria japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 12 (1863)

Dendropanax japonicus, SEEM., in Journ. Bot. II. p. 301 (1864); FR. et SAV., Enum. Pl. Jap. I. p. 194 (1875)

Gilibertia japonica, HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 41 (1894); ITO et MATSUM., Tent. Fl. Lutch. I. p. 271 (1899)

Dendropanax trifidum, MAK., in Tokyo Bot. Mag. XV. p. 91 (1901)

Nom. Jap. *Kakuremino*

Leg. Ipse, Kosugidani, Aug. 18, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The species grows in the laurisilvae or in the lauri-aciculisilvae as one of the elements that compose these forests.

Hedera, [TOURN., Instit. Rei. Herb. pp. 384, 612 (1700)] LINN., Sp. Pl. ed. 1. p. 202 (1753), DC., Prodr. IV. p. 261 (1830); ENDL., Gen. Pl. n. 4560 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 946 (1867) p.p.; HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 41 (1894); LEMÉE, Dict. Gen. Pl. Phan. III. p. 483 (1931)

Syn. *Helix*, MITCH., in Acta Acad. Nat. Cur. VIII. App. p. 224 (1784)

Hedera Tobleri, NAK., Fl. Sylv. Kor. XVI. p. 42 tt. 14-15 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 102 (1929)

Syn. *Hedera helix*, (non LINN.) THUNB., Fl. Jap. p. 102 (1784); FR. et SAV., Enum. Pl. Jap. I. p. 194 (1875)

Hedera rhombea, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 202 (1845) *nomen*; BEAN, Trees & Shrub. Brit. Ind. I. p. 609 (1914)

Hedera Helix, var. *rhombea*, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 12 (1863); FR. et SAV., Enum. Pl. Jap. I. p. 194 (1875)

Hedera colchica, (non KOCH) SEEM., in Journ. Bot. II. p. 307 (1864) p.p.; HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 42 (1894) p.p.; NAK., Fl. Kor. I. p. 274 (1909)

Hedera japonica, (non JUNGHUHN) PAUL, in Gard. Chron. p. 1215 (1867)

Hedera Helix, var. *japonica*, LAVALL., Arb. Segrez. p. 126 (1877)

Hedera Helix, var. *colchia*, MAK., in Tokyo Bot. Mag. VIII. p. 300 (1894)

Hedera japonica, TOBLER, Gatt. Hedera, p. 84, ff. 43-49 (1912); Fedd., Rep. Sp. Nov. XIII. p. 160 (1914); NAK., in Journ. Arnold. Arb. V. p. 25 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 822 (1931)

Nom. Jap. *Kizuta*

Leg. Ipse, Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. This climbing plant is found in the laurisilvae or in the lauri-aciculisilvae.

Kalopanax, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 10 (1863) p.p.; BENTH. et HOOK. f., Gen. Pl. I. p. 939 (1867) p.p.; HARMS,

in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 50 (1894) p.p.; NAK., in Journ. Arnold. Arb. V. p. 11 (1924), et Fl. Sylv. Kor. XVI p. 33 (1927); LEMÉE, Dict. Gen. Phan. III. p. 838 (1931) p.p.

Kalopanax autumnalis, KOIDZ., in Tokyo Bot. Mag. XXXVII. p. 58 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 102 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 823 (1931)
Nom. Jap. *Miyakodara*
Leg. Ipse, Aug. 3, 1924.
Distr. Honsyû.

Note. It is one of the members which compose the lauri-aciculisilvae, and has its southern limit in this island.

Aralia, (TOURN.) LINN., Sp. Pl. ed. 1. p. 273 (1753); ENDL., Gen. Pl. n. 4558 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 936 (1867); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 56 (1894); LEMÉE, Dict. Gen. Pl. Phan. I. p. 357 (1929)

Syn. *Aureliana*, LAFITTER, ex CATESBY, Nat. Hist. Carolina, App. p. 16 (1754)
Halagu, ADANS., Fam. II. p. 445 (1763)
Dimorphanthus, MIQ., Comm. Phytogr. p. 95 (1840)

Aralia elata, SEEM., in Journ. Bot. VI. p. 134 (1868); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 57 (1894); NAK., in Journ. Arnold. Arb. V. p. 30 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 819 (1931)

Syn. *Dimorphanthus elatus*, MIQ., Comm. Phytogr. p. 95, t. 12 (1840)
Aralia canescens, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 202 (1845)
Dimorphanthus mandshuricus, RUPRECHT et MAXIM., Prim. Fl. Amur. p. 133 (1859); SCHMIDT, Fl. Sachal. p. 141 (1868)
Aralia Manshurica, MAXIM., in Mém. Biolog. II. p. 427 (1857); KOM., Fl. Mansh. III. p. 123 (1907)
Aralia spinosa, (non LINN.) MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 7 (1863) p.p.
Aralia Mandchurica, SEEM., in Journ. Bot. VI. p. 134 (1868)
Aralia spinosa, var. *glabrescens*, FR. et SAV., Enum. Pl. Jap. I. p. 191 (1875)
Aralia chinensis, var. *canescens*, KOEHNE, in Deutsch. Dendr. p. 432 (1893); DIPPEL, Handb. III. p. 233 (1893) p.p.
Aralia chinensis, LINN.; NAK., Fl. Kor. I. p. 278 (1909)
Aralia chinensis, var. *glabrescens*, SCHNEIDER, III. Handb. Laubh. II. p. 431 (1911) p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 418 (1912); MIURA, List Pl. Manch. & Mong. p. 268 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 102 (1929)

Nom. Jap. *Taranoki*

Leg. Ipse, Aug. 11, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, Manchuria, Usuri.

Note. The species is found in the laurisilvae or in the lauri-aciculisilvae, and especially frequently in clearings as a pioneer.

Kalopanax autumnalis has its southern limit in this island, while some other elements are not found in Formosa. From this point one may deduce that the island has some relation with the northern

| Names of Plants | Regions | | | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|------------|--------------|--------|--------|-------|-------------------------|-----------|-------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Ussuri | China |
| Fatsia japonica, DECNE. et PLANCH. | | | | + | + | + | + | + | + | | | | | | |
| Agalma lutchuense, NAK. | | + | | + | + | + | + | | | | | | | | |
| Gilibertia trifida, MAK. | | | | + | + | + | + | + | + | + | | | | | + |
| Hedera Tobleri, NAK. | | | | + | + | + | + | + | + | + | | | | | |
| Kalopanax autumnalis, KOIDZ. | | | | | | | | | + | | | | | | |
| Aralia elata, SEEM. | | | | + | + | + | + | + | + | + | + | + | + | + | |
| Total 6 | | 1 | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 3 | 1 | 1 | | 1 | 1 |
| Percentage | | 17 | 83 | 83 | 83 | 83 | 83 | 67 | 83 | 50 | 17 | 17 | | 17 | 17 |

(Southern elements 5)

(Northern elements 6)

lands in respect of this family.

Apiaceae

Apiaceae, LINDL., Nat. Syst. ed. 2. p. 21 (1836), et Veg. Kingd. ed. 3. p. 773 (1853)

Syn. Umbelliferae, JUSS., Gen. p. 218 (1789); BENTH., in BENTH. et HOOK f. Gen. Pl. I. p. 850 (1867)

Hydrocotyle, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 234 (1753); DC., Prodr. IV. p. 59 (1830); ENDL., Gen. Pl. n. 4355 (1836-40); BENTH., in BENTH. et HOOK f. Gen. Pl. I. p. 872 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 116 (1897); LEMÉE, Dict. Gen. Pl. Phan. III. p. 688 (1931)

Hydrocotyle dichondroides, MAK., in Tokyo Bot. Mag. XXIV. p. 242 (1910); MAK. et NEM., Fl. Jap. ed. 2. p. 841 (1931)

Nom. Jap. Ketidome

Leg. Ipse, Ambō, Aug. 1931.

Distr. Kyūsyū.

Note. The species is found in waste land near the sea level and is not found in lands further south than this island.

Hydrocotyle javanica, THUNB., Diss. Hydrocot. n. 17 t. 2 (1798)

var. **laxa**, MASAMUNE, in Journ. Trop. Agr. IV. p. 300 (1932)

Syn. *Hydrocotyle javanica*, THUNB.; MATSUM., Ind. Pl. Jap. II. 2. p. 435 (1912) p.p.; MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 842 (1931) p.p.

Nom. Jap. *Obatidomegusa*

Leg. Ipse, Jul. 25, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, India.

Note. The species is found as undergrowth in the laurisilvae or in the lauri-aculisilvae.

Hydrocotyle nitidula, A. RICH., in Ann. Soc. Phys. IV. p. 200 (1820); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 842 (1931)

Syn. *Hydrocotyle rotundifolia*, var. *pauciflora*, YABE, Rev. Umb. Jap. p. 14 (1902)

Hydrocotyle Yabei, MAK., in Tokyo Bot. Mag. XXIV. p. 243 (1910)

Nom. Jap. *Hime-tidome-gusa*

Leg. Ipse, Jul. 23, 1928.

Distr. Honsyû, Kyûsyû, Tanegasima.

Note. The species is found in wet ground near small streams in the laurisilvae or in the lauri-aculisilvae. It has its southern limit in this island.

Hydrocotyle sibthorpioides, LAM., Encycl. III. p. 153 (1789); MORI, Enum. Pl. Cor. p. 271 (1922); MERR., Enum. Philipp. Pl. III. p. 237 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 261 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 842 (1931)

Syn. *Hydrocotyle rotundifolia*, ROXB., Hort. Beng. p. 21 (1814), et Fl. Ind. ed. 2. II. p. 88 (1832); DC., Prodr. IV. p. 64 (1830); WIGHT, Ic. Pl. Ind. Or. t. 564 (1847); BENTH., Fl. Hongk. p. 134 (1861); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 668 (1879); MAXIM., in Mém. Biolog. XII. p. 461 (1886); FORB. et HEMSL., Ind. Fl. Sin. I. p. 325 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 259 (1899); YABE, Rev. Umb. Jap. p. 12 (1902); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 116 (1912)

Nom. Jap. *Tidomegusa*

Leg. Ipse, Aug. 21, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines, India.

Note. The species is found in cultivated or waste lands near the sea level.

Hydrocotyle Wilfordi, MAXIM., in Mém. Biolog. XII. p. 463 (1886); FORB. et HEMSL., Ind. Fl. Sin. I. p. 326 (1887); PALIB., Consp. Fl. Kor. I. p. 96 (1898); YABE, Rev. Umb. Jap. p. 14 (1902); NAK., Fl. Kor. I. p. 253 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 436 (1912); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 116 (1912); MORI, Enum. Pl. Cor. p. 271 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 842 (1931)

Nom. Jap. *No-tidome*

Leg. Ipse, Jul. 7, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. The species is found in cultivated lands or in waste lands at low altitudes.

Centella, LINN., Pl. Rar. Afr. p. 28 (1760); DC., Prodr. IV. p. 68 (1830); ENDL., Gen. Pl. n. 4355b. (1836-40); BENTH., in BENTH.

et HOOK. f. Gen. Pl. I. p. 873 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 119 (1897); LEMÉE, Dict. Gen. Pl. Phan. II. p. 12 (1930)

Syn. Glyceria, NUTT., Gen. Amer. I. p. 177 (1818)

Centella asiatica, URB., Mart. Fl. Brass. XI. 1. p. 287 (1879); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 119 (1897); YABE, Rev. Umb. Jap. p. 16 (1902); NAK., Fl. Kor. I. p. 252 (1909), et in Bull. Biogeogr. Soc. Jap. I. p. 261 (1930); MATSUM., Ind. Pl. Jap. II. 2. p. 430 (1912); MORI, Enum. Pl. Cor. p. 270 (1922); MERR., Enum. Philipp. Pl. III. p. 238 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); YAMAZUTA, List Manch. Pl. p. 208 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 836 (1931)

Syn. Hydrocotyle asiatica, LINN., Sp. Pl. ed. 1. p. 234 (1753); WILLD., Sp. Pl. I. p. 1352 (1797); AITON, Hort. Kew. II. p. 118 (1811); A. RICH., Monogr. p. 40. n. 15, f. 11 (1820); SPR., Syst. Veg. I. p. 875 (1825); DC., Prodr. IV. p. 62 (1830); WIGHT, Ic. Pl. Ind. Or. p. 565 (1843); BENTH., Fl. Hongk. p. 134 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 55 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 178 (1875); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 669 (1879); HEMS., in Rep. Voy. Challeng. Bot. Atl. Isl. p. 35 (1885); FORB. et HEMS., Ind. Fl. Sin. I. p. 324 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 257 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 169 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 116 (1912)

Hydrocotyle ficarioides, LAM., Encycl. III. p. 152 (1789)

Trisanthus cochinchinensis, LOUR., Fl. Cochinch. ed. WILLDN. p. 219 (1793)

Hydrocotyle nummularioides, A. RICH., Monogr. p. 36 n. 11. f. 9 (1820); SPR., Syst. Veg. I. p. 875 (1825); DC., Prodr. IV. p. 63 (1830)

Nom. Jap. Tubokusa

Leg. Ipse, April. 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Bonins, Taiwan, Korea, Manchuria, China, Philippines.

Note. This is a widely distributed species in the warmer regions, and in Yakusima it is found in waste or cultivated lands near the sea level.

Sanicula, [TOURN., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 235 (1753); DC., Prodr. IV. p. 84 (1830); ENDL., Gen. Pl. n. 4382 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 880 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 137 (1897); WOLFF., in ENGL. Pfl.-reich. IV. 228. (Heft 61) p. 48 (1913)

Sanicula elata, HAMILT. var. *japonica*, KOIDZ., in Tokyo Bot. Mag. XLIV. p. 95 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 850 (1931)

Syn. Sanicula canadensis, (non LINN.) THUNB., Fl. Jap. p. 116 (1784)

Sanicula japonica, SIEB., Syn. Pl. Oec. p. 46 (1830)

Sanicula chinensis, BUNGE, Enum. Pl. Chin. Bor. n. 189 (1831); PALIB., Consp. Fl. Kor. I. p. 96 (1898)

Sanicula elata, (non HAMIL.) FR. et SAV., Enum. Pl. Jap. I. p. 178 (1875); KOM., Fl. Mansh. III. p. 130 (1907); NAK., Fl. Kor. I. p. 253 (1909)

Sanicula europaea, (non LINN.) KURZ, in Journ. As. Soc. II. p. 114 (1877); FORB. et HEMS., Ind. Fl. Sin. I. p. 326 (1887); YABE, Rev. Umb. Jap. p. 19 (1902)

Sanicula europaea, LINN. var. *elata*, MAK., in Inuma Somoku-Dzusetsu ed. 3. I. p. 37 (1907), et in Tokyo Bot. Mag. XXII. p. 176 (1908); MATSUM., Ind.

Pl. Jap. II. 2. p. 442 (1912); MIY. et MIYAKE, Fl. Sagh. p. 185 (1915); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929)

Nom. Jap. *Uma-no-mituba*

Leg. Ipse, Jul. 9, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria, China.

Note. It grows as undergrowth in the laurisilvae and has its southern limit in this island.

Sanicula satsumana, MAXIM., in Mél. Biolog. XII. p. 465 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 528 (1899); YABE, Rev. Umb. Jap. p. 21 (1902); MATSUM. et HAY., Enum. Pl. Formos. p. 175 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 443 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 850 (1931)

Nom. Jap. *Hime-umano-mitubu*

Leg. Ipse, Kusugawa, Mart. 1923.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. The species grows as undergrowth in the lauri-aciculisilvae.

Osmorrhiza, RAF., in Amer. Monthly Magaz. II. p. 176 (1818), et in Journ. Phys. LXXIX. p. 257 (1819); DC., Prodr. IV. p. 232 (1830); ENDL., Gen. Pl. n. 4515 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. III. p. 897 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 153 (1897); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 928 (1932)

Syn. *Uraspermum*, NUTT., Gen. Amer. I. p. 192 (1818)

Osmorrhiza aristata, MAK. et YABE, in Tokyo Bot. Mag. XVII. p. 14 (1903); NAK., Fl. Kor. II. p. 490 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 439 (1912); MASAMUNE, Prep. Rep. Veg. Yak. p. 104 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 845 (1931)

Syn. *Cherophyllum aristatum*, THUNB., Fl. Jap. p. 119 (1784); WILLDN., Sp. Pl. I. p. 1454 (1797); DC., Prodr. IV. p. 228 (1830)

Myrrhis aristata, SPRENG., Umb. Sp. p. 133 (1818), et Syst. Veg. I. p. 902 (1825); SCHULT., Syst. Veg. VI. p. 512 (1820)

Osmorrhiza japonica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 203 (1845); FR. et SAV., Enum. Pl. Jap. I. p. 183 (1875); MAXIM., in Mél. Biolog. XII. p. 469 (1886); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 153 (1897); YABE, Rev. Umb. Jap. p. 23 (1902)

Osmorrhiza longistylis, A. GRAY, in Narr. Perry's Exped. II. p. 312 (1856), et Bot. Jap. p. 391 (1858); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 64 (1867)

Uraspermum aristatum, O. KUNTZE, Rev. Gen. Pl. I. p. 270 (1891)

Nom. Jap. *Yabuninzin*

Leg. Y. KUDO! Aug. 1907.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. This species is found as undergrowth in forests or bushes at low altitudes, and has its southern limit in this island.

Torilis, ADANS., Fam. II. p. 99 (1763); DC., Prodr. IV. p. 218 (1830); ENDL., Gen. Pl. n. 4503 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. 3. p. 928 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 155 (1897)

Torilis anthriscus, GMEL., Fl. Bad. I. p. 613 (1805); SPR., Syst. Veg. I. p. 898 (1825); DC., Prodr. IV. p. 218 (1830); WIGHT et ARN., Prodr. Fl. Pen. Ind. Or. I. p. 374 (1834); FORB. et HEMSL., Ind. Fl. Sin. I. p. 337 (1887); DIELS, Fl. Centr. Chin. p. 492 (1900); YABE, Rev. Umb. Jap. p. 25 (1902), et Enum. Pl. Manch. p. 102 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 174 (1906); MATSUM., Ind. Jap. II. 2. p. 444 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 118 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 852 (1931)

Syn. *Caucalis anthriscus*, SCOP., "Fl. Carn. (1760) "

Caucalis japonica, HOUTT., Pfl.-Syst. VIII. p. 42, t. 45 f. 1 (1777); SPRENG., Syst. Veg. I. p. 896 (1825); FR. et SAV., Enum. Pl. Jap. I. p. 190 (1875)

Chaerophyllum scabrum, THUNB., Fl. Jap. p. 119 (1784)

Torilis japonica, DC., Prodr. IV. p. 219 (1830); HOOK. et ARNOT., Bot. Capt. Beech. Voy. pp. 189, 264 (1836-40); GRAY, in Narr. Perr. Exped. p. 312 (1856); FR., Pl. David. p. 145 (1884); NAK., Fl. Kor. I. p. 255 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929)

Caucalis anthriscus, ITO et MATSUM., Tent. Fl. Lutch. I. p. 532 (1899)

Nom. Jap. *Yabuzirami*

Leg. Ipse, Jun. 14, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species is found in waste lands at low altitudes.

Cryptotaenia, DC., Mém. Fam. Umbelif. p. 42 (1829, et Prodr. IV. p. 118 (1830); ENDL., Gen. Pl. n. 4409 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 896 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 189 (1897); LEMÉE, Dict. Gen. Pl. Phan. II. p. 401 (1930)

Syn. *Deringa*, ADANS., Fam. II. p. 498 (1763)

Deeringia, O. KUNTZE, Rev. Gen. Pl. I. p. 266 (1891)

Cryptotaenia japonica, HASSK., in Retzia, I. p. 113 (1855); MAXIM., in Mém. Biolog. XII. p. 467 (1886); ITO et MATSUM., Tent. Fl. Lutch. I. p. 528 (1899); YABE, Rev. Umb. Jap. p. 39 (1902); NAK., Fl. Kor. I. p. 258 (1909); MAK. et NEM., Fl. Jap. ed. 2. p. 840 (1931)

Syn. *Sison canadense*, (non LINN.) THUNB., Fl. Jap. p. 118 (1784)

Cryptotaenia canadensis, (non DON) SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 203 (1845); FR. et SAV., Enum. Pl. Jap. I. p. 182 (1875)

Cryptotaenia canadensis, (non DC.) HANCE, in Journ. Bot. p. 340 (1865), et p. 276 (1870); FORB. et HEMSL., Ind. Fl. Sin. I. p. 329 (1887); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 117 (1912)

Cryptotaenia canadensis, DC. var. *japonica*, MAK., in Tokyo Bot. Mag. XXII. p. 175 (1908); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929)

Nom. Jap. *Mituba*

Leg. Ipse, Jul. 20, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Korea, China.

Note. The species is found in the laurisilvae in the submountain region.

Oenanthe, [TOURN., ex LINN. Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 254 (1753); DC., Prodr. IV. p. 136 (1830); ENDL., Gen. Pl. n. 4418a (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 905 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 204 (1897); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 816 (1932)

Syn. *Actinanthus*, EHRENB., in Linn. IV. p. 398 (1829)

Oenanthe stolonifera, WALL., Cat. n. 585 (1828); DC., Prodr. IV. p. 138 (1830); WIGHT, Ic. Ind. Or. t. 571 (1843); FR. et SAV., Enum. Pl. Jap. I. p. 183 (1875); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 696 (1879); FR., Pl. David. I. p. 140 (1884); MAXIM., in Engl. Bot. Jahrb. VI. p. 61 (1885); FORB. et HEMS., Ind. Fl. Sin. I. p. 331 (1887); HEMS. et COLL., in Journ. Linn. Soc. XXVIII. p. 61 (1890); ITO et MATSUM., Tent. Fl. Lutch. I. p. 262 (1899); DIELS, Fl. Centr. Chin. p. 498 (1900); YABE, Rev. Umb. Jap. p. 54 (1902); MATSUM. et HAY., Enum. Pl. Formos. p. 173 (1906); KOM., Fl. Mansh. III. p. 153 (1907); NAK., Fl. Kor. I. p. 262 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 438 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 117 (1912); MERR., Enum. Hainan Pl. p. 141 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 844 (1931)

Syn. *Oenanthe javanica*, DC., Prodr. IV. p. 138 (1830); ZOLLING., Syst. Verz. Ind. Arch. Sam. Jap. Emph. Pfl. II. p. 189 (1855); MIQ., Cat. Fl. Jap. p. 41 (1870)

Phellandrum stoloniferum, ROXB., Fl. Ind. II. p. 93 (1832)

Dasyloma subbipinnatum, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 59 (1867)

Nom. Jap. Seri

Leg. Ipse, Jun. 6, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Grows in somewhat wet places; common in Japan.

Chamaele, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 59 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 207 (1897); LEMÉE, Dict. Gen. Pl. Phan. II. p. 74 (1930)

Chamaela decumbens, MAK. var. *micrantha*, MASAMUNE, in Journ. Trop. Arg. IV. p. 76 (1932)

Nom. Jap. *Yakusima-sentôsô*

Leg. Ipse, Jun. 11, 1928.

Distr. Endemica. (*Species* Honsyû, Sikoku, Kyûsyû)

Note. The variety is found as undergrowth in the laurisilvae at low altitudes.

Cnidium, CUSSON, ex DC. Prodr. IV. p. 152 (1830); ENDL., Gen. Pl. n. 4436 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 914 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 210 (1897)
Syn. *Gnidium*, G. DON, in London Hort. Brit. p. 107 (1830)

Cnidium longeradiatum, YABE, Rev. Umb. Jap. p. 61 (1902); MATSUM., Ind. Pl. Jap. II. 2. p. 433 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 838 (1931)

Syn. *Selinum longeradiatum*, MAXIM., in Mém. Biolog. XII. p. 469 (1886); MAK., in Tokyo Bot. Mag. XIV. p. 33 (1900)

Nom. Jap. *Tukusi-zeri*

Leg. Ipse, Miyanoouradake, Aug. 31, 1926.

Distr. Honsyû, Kyûsyû.

Note. This species is found on sandy open places in the Pseudosasa Owatarii Association, and is not reported further south than this island.

Angelica, [REV., ex LINN. Syst. ed. 1 (1735)]
et Sp. Pl. ed. 1. p. 250 (1753); DC., Prodr. IV. p. 167 (1830); ENDL., Gen. Pl. n.

4456 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 916 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 219 (1897); LEMÉE, Dict. Gen. Pl. Phan. II. p. 264 (1929)

Syn. *Gingidium*, FORST., Char. Gen. p. 41. t. 21 (1776)

Angelica kiusiana, MAXIM., in Mém. Biolog. IX. p. 14 (1873); FR. et SAV., Fnum. Pl. Jap. I. p. 187 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 334 (1887); BRETSCHNEIDER, Hist. Europ. Bot. Disc. Chin. p. 596 (1898); ITO et MATSUM., Tent. Fl. Lutch. I. p. 531 (1899); YABE, Rev. Umb. Jap. p. 78 (1902); NAK., Fl. Kor. I. p. 269 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 424 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 103 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 830 (1931)

Syn. *Angelica Sieboldi*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 61 (1867)

Nom. Jap. *Oniudo*

Leg. Ipse, Nakama, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Korea.

Note. This is a psammophyte which is found on sea beaches, and is common in Japan proper, but is not yet reported further south than Yakusima.

Glehnia, F. SCHMIDT, ex MIQ., in Ann. Mus.

Bot. Lugd. Bat. III. p. 61 (1867); LEMÉE, Dict. Gen. Pl. Phan. III. p. 265 (1931)

Syn. *Phellopterus*, BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 905 (1867)

Glehnia littoralis, F. SCHMIDT, ex MIQ. in Ann. Mus. Bot. Lugd. Bat. III. p. 61 (1867)

Syn. *Cymopterus littoralis*, A. GRAY, Bot. Jap. p. 391 (1858)

Phellopterus littoralis, BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 905 (1867); FR. SCHM., Fl. Saghal. p. 138 (1868); FR. et SAV., Enum. Pl. I. p. 185 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 331 (1887); ITO et MATSUM., Tent. Fl. Lutch. I. p. 262 (1899); YABE, Rev. Umb. Jap. p. 93 (1902); KOM., Fl. Mansh. III. p. 174 (1907); NAK., Fl. Kor. I. p. 272 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 441 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 117 (1912); MIY. et MIYAKE, Fl. Sagh. p. 192 (1915); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929); HULT., Fl. Kamtch. III. p. 171 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 848 (1931); TATEWAKI, Phytog. Midd. Kuril. pp. 206, et 232 (1932)

Nom. Jap. *Hama-bôhu*

Leg. Ipse, Ambô, Jul. 19, 1928.

Distr. Kamtchatka, Northern & Southern Kuriles, Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. This psammophyte is found on sandy sea beaches, and is common throughout Japan.

Peucedanum, [TOURN., ex LINN. Syst. ed. 1

(1735), et Gen. Pl. ed. 1. p. 74 (1737)] et Sp. Pl. ed. 1. p. 244 (1753); DC., Prodr. IV. p. 176 (1830); ENDL., Gen. Pl. n. 4462 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. pp. 918, 921 (1867); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 235 (1897)

Syn. *Orcoselinum*, (TOURN.) ex ADANS., Fam. II. p. 100 (1763)

Peucedanum japonicum, THUNB., Fl. Jap. p. 117 (1784); SPRENG., Syst. I. p. 911 (1825); DC., Prodr. IV. p. 182 (1830); FR. et SAV., Enum. Pl. Jap. I. p. 189 (1875); ITO et MATSUM., Tent. Fl. Lutch. I. p. 264 (1899); YABE, Rev. Umb. Jap. p. 95 (1902);

| Names of Plants | Regions | | | | | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|-------------|------------|-------|----|--------|--------|-------|-------------------------|-----------|-------------------------------|-------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Ryūkyūs | | Tanegasima | Kyūsū | | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Usuri | China |
| | | | | | Amami-Ōshima | Kyūsū Prop. | | | | | | | | | | | |
| Hydrocotyle dichondroides, MAK. | | | | | | | + | | | | | | | | | | |
| Hydrocotyle javanica, THUNB. var. laxa, MASAMUNE | + | + | | + | + | + | + | + | + | + | + | | | | | | + |
| Hydrocotyle nitidula, A. RICH. | | | | | | | + | + | | | + | | | | | | |
| Hydrocotyle sibthorpioides, LAM. | + | + | + | + | + | + | + | + | + | + | + | | | | | | + |
| Hydrocotyle Wilfordi, MAXIM. | | | | | | + | + | + | + | + | + | + | + | | | | + |
| Centella asiatica, URB. | + | + | + | + | + | + | + | + | + | + | + | | | | | + | + |
| Sanicula elata, HAMILT. var. japonica, KOIDZ. | | | | | | | + | + | + | + | + | + | + | + | | + | + |
| Sanicula satsumana, MAXIM. | | | + | + | + | + | + | + | | | | | | | | | |
| Osmorrhiza aristata, MAK. et YAB. | | | | | | | | + | + | + | + | + | + | | | | |
| Torilis anthriscus, GMEL. | | | + | + | + | + | + | + | + | + | + | + | + | | | + | + |
| Cryptotaenia japonica, HASSK. | | | | + | | | + | + | + | + | + | + | + | | | | + |
| Oenanthe stolonifera, DC. | | | + | + | + | + | + | + | + | + | + | + | + | | | + | + |
| Chamaele decumbens, MAK. var. micrantha, MASAMUNE | | | | | | | | | | | | | | | | | |
| Cnidium longeradiatum, YABE | | | | | | | | + | | + | | | | | | | |
| Angelica kiusiana, MAXIM. | | | | + | | | | + | + | + | + | | | | | | |
| Glehnia littoralis, F. SCHMIDT | | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Peucedanum japonicum, THUNB. | | | + | + | + | | + | + | + | + | + | | | | | | |
| Total | 17 | 3 | 2 | 8 | 10 | 9 | 10 | 16 | 12 | 14 | 12 | 7 | 2 | 1 | 5 | 9 | |
| Percentage | | 18 | 12 | 41 | 59 | 53 | 59 | 94 | 71 | 82 | 71 | 41 | 12 | 6 | 29 | 53 | |

(Southern elements 11)

(Northern elements 16)

Nom. Jap. *Botan-bôku*

Leg. Ipse, Jul. 14, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. The species grows on rocky ground near the seashore, and is common in South Japan.

When we take the distribution of the plants of *Apiaceae* indigenous to this island into consideration, we naturally come to the conclusion that the island has many connection with the northern floral lands beyond Yakusima.

Cornaceae

Cornaceae, LINK, Handb. II. p. 2 (1831); BENTH., in BENTH. et HOOK. f. Gen. Pl. I. p. 947 (1867)

Cynoxylon, RAF., Alsogr. Amer. p. 59 (1838);

Nak., Fl. Sylv. Kor. XVI. p. 67 (1927)

Syn. *Cornus*, [TOUR., Inst. Herb. p. 641, t. 410 (1700) LINN., Sp. Pl. ed. 1. p. 117 (1753) partim.

Benthamia, LINDL., Bot. Regist. XIX. t. 1576 (1833) p.p.

Cynoxylon japonica, var. *typica*, NAK., Fl. Sylv. Kor. XVI. p. 70 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929)

Syn. *Benthamia japonica*, SIEB. et ZUCC., Fl. Jap. I. p. 38, t. 16 (1836); BENTH., Fl. Hongk. p. 138 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 159 (1865)

Cornus kousa, BUERGER, ex MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 159 (1866); HANCE, in Journ. Linn. Soc. XIII. p. 105 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 196 (1875); HARMS., apud DIELS Fl. Cent. Chin. p. 506 (1901); SCHNEID., Ill. Handb. Laubholz. II. p. 454, ff. 301 n-q, 302 g (1909); NAK., Fl. Kor. I. p. 280 (1909); W. WANGERIN, in ENGL. Pfl.-reich. IV. 229 (Heft 88) p. 88 (1910); MATSUM., Ind. Pl. Jap. II. 2. p. 446 (1912); REHDER, in SARGENT, Pl. Wils. II. p. 577 (1916); CHUN., Cat. Tree. & Shrub. Chin. p. 190 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 854 (1931)

Cynoxylon kousa, (BUERGER) NAK., apud MORI, Enum. Pl. Cor. p. 275 (1922)

Nom. Jap. *Yama-bôsi*

Leg. Ipse, Mont. Isizuka, Jul. 10, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, China.

Note. It grows from 1000 m up to 1800 m above the sea level and is not yet found in Formosa. It has its southern limit in Iriomote Island.

Helwingia, WILLD., Sp. Pl. IV. 2. p. 716 (1806);

ENDL., Gen. Pl. n. 2090 (1836-40); BENTH. et HOOK. f., Gen. Pl. I. p. 939 (1867);

DC., Prodr. XVI. 2. p. 680 (1868); HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 263 (1897); LEMÉE, Dict. Gen. Pl. Phan. III. p. 514 (1931)

Helwingia japonica, WILLD., ex DIETR. Nacht. Gart. Lex. III. p. 660 (1815-21); STEUD., Nom. ed. 2. p. 748 (1840); DC., Prodr. XVI. 2. p. 680 (1868); FR. et SAV., Enum.

Pl. Jap. I. p. 195 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 447 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 190 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 855 (1931)

Syn. *Osyris japonica*, THUNB., Fl. Jap. p. 31 (1784), et Ic. Pl. Jap. Dea. 3, t. 1 (1784)
Helwingia rusciflora, WILLD., Sp. Pl. IV. p. 716 (1805); SIEB. et ZUCC., Fl. Jap. p. 164, t. 86 (1841); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 21 (1867); HAY., Fl. Mont. Formos. p. 106 (1908)

Nom. Jap. *Hanaikada*

Leg. Y. KUDO!

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China.

Note. I have never seen this plant in Yakusima, but was informed by DR. KUDO that he had collected this species in the island. It is rather widely distributed in South Japan.

Cornus, [TOURN., Inst. Rei. Herb. p. 641, t. 410 (1700); LINN., Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 117 (1753) p.p.; JUSS., Gen. Pl. p. 214 (1789); DC., Prodr. IV. p. 271 (1830) p.p.; ENDL., Gen. Pl. n. 4574 (1836-40) p.p.; HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 950 (1867) p.p.; HARMS, in ENGL. u. PRANT. Nat. Pfl.-fam. III. viii. p. 265 (1898) p.p.; WANGERIN, in ENGL. Pfl.-reich. IV. 229 (Heft 41) p. 43 (1909) p.p.; LEMÉE, Dict. Gen. Pl. Phan. II. p. 312 (1930)

Cornus brachypoda, C. A. MEY., in Mém. Acad. Pétersb. 6. sér. VII. 2. Nat. V. p. 223 (1844); WAPL., in Ann. II. p. 725 (1851-52); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 160 (1866); K. KOCH, Dendr. I. p. 685 (1869); FR. et SAV., Enum. Pl. Jap. I. p. 195 (1875); HARMS, apud DIELS, Fl. Centr. Chin. p. 506 (1901); KOEHNE, in Mitt. Deutsch. Dendr. Gesell. XII. p. 40 (1903); REHDER, in SARGENT, Trees & Shrub. II. p. 81, t. XLI. (1903); WANGERIN, in ENGL. Pfl.-reich. IV. 299 (Heft. 41) p. 64 (1909); NAK., Fl. Kor. I. p. 281 (1909), et Fl. Sylv. Kor. XVI. p. 85, t. 29 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 853 (1931)

Syn. *Cornus alba*, (non LINN.) THUNB., Fl. Jap. p. 63 (1784); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 194 (1845)

Cornus sanguinea, (non LINN.) THUNB., Fl. Jap. p. 62 (1784); SIEB. et ZUCC., Fl. Jap. Fam. Nat. I. p. 194 (1845)

Cornus macrophylla, (non WALL.) FORB. et HEMS., Ind. Fl. Sin. I. p. 345 (1887); SCHNEID., III. Handb. Laubhl. II. p. 444 f. 298 e (1909) p.p.; SHIRASAWA, Ic. Ess. For. Jap. ed. 2, I. p. 214, t. 77 ff. 1-2 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 446 (1912); BEAN., Tree. & Shrub. I. p. 390 (1914); REHDER, in SARGENT. Pl. Wil. II. p. 575 (1916); CHUN., Cat. Tree. & Shrub. Chin. p. 191 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 104 (1929)

Nom. Jap. *Kumano-mizuki*

Leg. Ipse, ca. Mugio, Sept. 6, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, China.

Note. The plant is found in the laurisilvae near plains or in cultivated land. It has its southern limit in this island.

Aucuba, THUNB., Diss. Nov. Gen. Pl. III. p. 61 (1783), et Fl. Jap. p. 4, tt. 12 et 13 (1784); DC., Prodr. IV. p. 274 (1830); ENDL., Gen. Pl. n. 4575 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. 3. p. 950

Though the variety is endemic to this island, the type species is found in Kyûsyû, Sikoku, Honsyû, and Yezo, so the island should be included in the same floristic region as these regions. *Shortia* is one of the tertiary genera and has a disjunct distribution area, and is chiefly distributed in eastern Asia and in North America. (The North American species is *S. galacifolia*.) In Japan the genus is found in Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa and Taiwan. In respect of this

limit in this island. More interesting than this is the fact that not only the species but also the genus *Clethra* (or rather *Clethraceae* itself) is not yet found in Ryûkyû and Formosa, both southern portions of the Empire. In respect of the flora of this family the flora of Japan is divided into two parts; the southern region which has no representative of this family, (including Ryûkyû and Formosa) and the northern region which has one representative of this family (including the lands from Yakusima to Yezo). These facts show clearly that a line of demarkation for the flora of Japan may be drawn between Amami-Ôsima and Yakusima.

Pirolaceae

Pirolaceae, (*Pyrolaceae*) DUMORT, Anal. Fam. pp. 43, et 47 (1829)

Pirola, (*Pyrola*) [TOURN., ex LINN. Syst. ed. 1 (1735), Gen. Pl. ed. 1. p. 123 (1737)] et Sp. Pl. ed. 1. p. 396 (1753); ENDL., Gen. Pl. n. 4349 (1836-40); DC., Prodr. VII. p. 772 (1839); BENTH. et HOOK. f., Gen. Pl. II. p. 602 (1876); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 8 (1889)

Pirola japonica, SIEB., in Bonplandia X. p. 93 (1862), et ex MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 166 (*ut syn.*) (1866); MORI, Enum. Pl. Cor. p. 276 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 105 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 858 (1931)
Syn. *Pirola asarifolia*, var. *japonica*. MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 166 (1866)

Pirola rotundifolia, LINN. var. *albiflora*, MAXIM.; MAK., in Tokyo Bot. Mag. XI. p. (450) (1897); MATSUM., Ind. Pl. Jap. II. 2. p. 450 (1912)

Pyrola rotundifolia, (non LINN.) KOM., Fl. Mansh. III. p. 194 (1907); Nak., Fl. Kor. II. p. 70 (1911)

Nom. Jap. *Itiyakusô*

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Dist. Southern Kuriles, Yezo, Honsyû, Kyûsyû, Korea, Manchuria.

Note. The plant grows as undergrowth in the laurisilvae or in the lower part of the lauri-aciculisilvae.

Monotropas, [LINN., Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 111 (1737)] et Sp. Pl. ed. 1. p. 387 (1753); ENDL., Gen. Pl. n. 4351 (1836-40); DC., Prodr. VII. p. 781 (1839); BENTH. et HOOK. f., Gen. Pl. II. p. 607 (1876); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 10 (1889); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 551 (1932)

Monotropas uniflora, LINN., Sp. Pl. ed. 1. p. 387 (1753); HOOK., Exot. Fl. II. t. 85 (1825); DC., Prodr. VII. p. 781 (1839); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 166 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 296 (1875); MAXIM., in Mém. Biolog.

VIII. p. 626 (1872); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. III. p. 476 1882; FORB. et HEMSL., Ind. Fl. Sin. II. p. 34 (1889); BOISS., in Bull. Herb. Boiss. V. p. 924 (1897); MATSUM., Ind. Pl. Jap. II. 2. p. 449 (1912); HAY., Ic. Pl. Formos. III. p. 146 (1913); MIY. et MIYAKE, Fl. Saghal. p. 312 (1915); MORI, Enum. Pl. Cor. p. 276 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 105 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 859 (1931)

Nom. Jap. *Ginryōsō*

Leg. Ipse, Kosugidani, Jun. 8, 1928.

Distr. Saghalien, Southern Kuriles, Yezo, Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Okinawa, Taiwan, Korea, China, India, North America.

Note. This mycorhyza plant is found as undergrowth on humus ground in the laurisilvae or in the lauri-aciculisilvae.

| Names of Plants | Regions | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|--------|--------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōsima | Ryūkyūs | Kyūsyū | Sikoku | Honsyū | Korea |
| <i>Pirola japonica</i> , SIEB. | | | | | | | + | + | + | + |
| <i>Monotropa uniflora</i> , LINN. | | + | + | + | | | + | + | + | + |

In the distribution of the plants of this family the island shows special affinity with the northern floral region.

Ericaceae

Ericaceae, DC., in Lam. et DC. Fl. Franc. III. p. 675 (1815); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 15 (1889)

Syn. *Rhodoraceae*, VENT., Tabl. Reg. Veg. II. p. 449 (1779)

Tripetaleia, SIEB. et ZUCC., in Abh. Akad. Mun-chen III. p. 2. p. 731, t. 3, f. 2 (1843); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 598 (1876); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 33 1889

Tripetaleia yakusimensis, NAK., in Tokyo Bot. Mag. XL. p. 485 (1926), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 13, f. 3 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 106 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 893 (1931)

Nom. Jap. *Yakusima-hotutuzi*

Leg. Ipse, Tatyûdake, Jul. 22, 1927.

Distr. Kyûsyû.

Note. The species is found in the lauri-aciculisilvae from 1400 m up to 1900 m above the sea level and is limited to Yakusima and the main land of Kyûsyû.

Rhododendron, LINN., Sp. Pl. ed. 1. p. 392 (1753),
et Gen. Pl. ed. 5. p. 185 (1754); ENDL., Gen. Pl. n. 4341 (1836-40); DC., Prodr.
VII. p. 719 (1839); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 599 (1876)
emend; DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 35 (1889)
Syn. *Azalea*, [LINN., Gen. Pl. ed. 1. p. 53, n. 151 (1737)] et ed. 5. p. 75 (1754); ROEM.
et SCHULT., Syst. Veg. IV. p. 728 (1819); ENDL., Gen. Pl. n. 4338 (1836-40);
BRITT. & BROWN, Ill. Fl. I. p. 558 (1913)

Rhododendron Keiskei, MIQ. var. *cordifolia*, MASAMUNE, in Journ. Trop. Agr. IV. p. 195 (1932)

Syn. *Rhododendron Keiskei*, (non MIQ.) MASAMUNE, Prel. Rep. Veg. Yak. p. 105 (1929)

Nom. Jap. *Yakusima-hikage-tutuzi*

Leg. Ipse, Kosugidani, Mart. 17, 1923.

Distr. Endemica

Note. The variety is found as epiphytes or terrestrials or lithophytes from 600 m up to 1900 m above the sea level. The variety is restricted to this island, but the type species is widely distributed in southern Honsyû, Sikoku, and Kyûsyû.

Rhododendron lateritium, PLANCH., Fl. des Serres IX. p. 80 (1853); NAK., in NAK. et KOIDZ. Trees & Shrub. Jap. ed. 2. I. p. 124 f. 59 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 105 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 881 (1931)

Syn. *Azalea indica*, LINN., Sp. Pl. ed. 1. p. 150 (1753); THUNB., Fl. Jap. p. 84 (1784) p.p.

Azalea indica, var. *lateritia*, LINDL., in Bot. Regist. XX. t. 1700 (1835)

Rhododendron Sieboldii, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 33 (1863) p.p.

Rhododendron Sieboldii, var. *serrulatum*, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 33 (1863)

Rhododendron indicum, (non SWEET) SCHNEID., Ill. Handb. Laubholzk. II. p. 506 (1909) p.p.; STEVENS, Sp. Rhododendr. p. 84 (1930) p.p.

Rhododendron indicum, var. *macranthum*, MATSUM., Ind. Pl. Jap. II. 2. p. 461 (1912)

Nom. Jap. *Satuki*

Leg. Ipse, Kosugidani, Mart. 18, 1923.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The shrub is found along streams from about 400 m up to 1500 m above the sea level. It has its southern limit in this island.

Rhododendron nagasakianum, NAK., in Tokyo Bot. Mag. XL. p. 484 (1926); MAK. et NEM., Fl. Jap. ed. 2. p. 884 (1931)

Syn. *Rhododendron yakumontanum*, MASAM., Prel. Rep. Veg. Yak. p. 106 (1929)

Nom. Jap. *Tukusi-mitubatutuzi*

Leg. Ipse, Nagatadake, Jul. 25, 1927.

Note. This azalea is found from about 1700 m up to 1900 m on rocky ground and is not yet reported in other regions except the main land of Kyûsyû and this island.

Rhododendron Tamurai, (MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 106 (1929)

Syn. *Rhododendron indicum*, var. *Tamurai*, MAK., in Tokyo Bot. Mag. XVII. p. 102 (1904)

Rhododendron eriocarpum, (non NAK.) MAK. et NEM., Fl. Jap. ed. 2. p. 875 (1931) p.p.

Nom. Jap. *Maruba-satuki*

Leg. Ipse, Nagata, Aug. 20, 1928.

Distr. Kyûsyû, Kutinoerabu, Amami-Ôsima, Okinawa.

Note. The plant is found on sunny grounds near the sea level. It is common in the Linschoten (*Hitito*) islands which lie between Yakusima and Amami-Ôsima.

Rhododendron Tashiroi, MAXIM., in Bull. Acad. Imp. Sc. St. Petersburg. XXXI. p. 64 (1887), et in Mém. Biolog. XII. p. 489 (1887); MATSUM., in Tokyo Bot. Mag. XII. p. 3 (1898), et Ind. Pl. Jap. II. 2. p. 465 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 69 f. 30 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 106 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 890 (1931); STEV., Sp. Rhodod. p. p. 123 (1930)

Nom. Jap. *Sakura-tutuzi*

Leg. Ipse, Kusugawa, Mart. 17, 1923.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species grows along streams in the laurisilvae or in the lauri-aciculisilvae. It is found from South Kyûsyû to Okinawa.

var. *leucanthum*, MASAMUNE, Prel. Rep. Veg. Yak. p. 106 (1929), et in Tokyo Bot. Mag. XLIV. p. 219 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 890 (1931)

Nom. Jap. *Sirobana-sakura-tutuzi*

Leg. Ipse, Kosugidani, April. 5, 1927.

Note. The variety is endemic and occurs on rare occasion in the laurisilvae.

Rhododendron yakuinsulare, MASAMUNE, in Journ. Trop. Agr. II. p. 38 (1930)

Nom. Jap. *Yakusima-yama-tutuzi*

Leg. Ipse, Jun. 6, 1928.

Distr. Endemica.

Note. The species is found in the laurisilvae at about 400 m above the sea level.

Rhododendron yakushmanum, NAK., in Tokyo Bot. Mag. XXXV. p. 135 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 66, f. 28 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 106 (1929); STEVENS., Sp. Rhododendron p. 581 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 892 (1931)

Nom. Jap. *Yakusima-syakunagi*

Leg. Yaegadake, Jun. 12, 1928.

Distr. Endemica.

Note. This species is found from a height of nearly 500 m up to the highest point of the island.

Menziesia, SMITH, Ic. Ined. III. t. 56 (1791);

ENDL., Gen. Pl. n. 4317 (1836-40); DC., Prodr. VII. p. 713 (1839); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 602 (1876); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 37 (1889); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 42 (1927); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 405 (1932)

Syn. *Candollea*, BAUMG., Catal. Hort. Bollow. (1810)

Menziesia purpurea, MAXIM., in Mél. Biolog. VI. p. 204 (1867), et in Bull. Acad. Imp. Sc. St. Petersb. XI. p. 431 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 287 (1875); MAK., in Tokyo Bot. Mag. IX. p. 389 (1895); MATSUM., Ind. Pl. Jap. II. 2. p. 456 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 44 f. 18 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 105 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 871 (1931)

Nom. Jap. *Yōraku-tutuzi*

Leg. Ipse, Nagatadake, Jun. 12, 1928.

Distr. Honsyū, Kyūsyū.

Note. The plant is found as lithophytes on rocky ground or on rocks in the Pseudosasa Owatarii Association.

Pieris, D. DON, in Edinburgh New Phil. Journ.

XVII. p. 159 (1834) p.p.; DC., Prodr. VII. p. 598 (1839)

Syn. *Portuna*, NUTTALL, in Trans. Amer. Philosoph. Soc. VIII. p. 268 (1848)

Pieris, Sect. *Portum*, BENTH. et HOOK. f., Gen. Pl. II. p. 588 (1876)

Lyonia NUTT. subg. *Pieris*, DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 44 (1889)

Pieris japonica, (THUNB.) D. DON, ex G. Don, A. Gen. Syst. Dichl. Pl. III. p. 832 (1834); YATABE, Iconogr. Fl. Jap. I. 2. p. 105. Pl. XXIX, (1892); MAK., in Tokyo Bot. Mag. VIII. p. 213 (1894); MATSUM., Ind. Pl. Jap. II. 2. p. 457 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 201, f. 100 (1927); REHD., Man. Cult. Tree. & Shrub. p. 710 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 105 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 872 (1931)

Syn. *Andromeda japonica*, THUNB., Fl. Jap. p. 181, t. 22 (1784)

Nom. Jap. *Asebi*

Leg. Ipse, Kosugidani, Mart. 18, 1923.

Distr. Honsyū, Sikoku, Kyūsyū,

Note. The plant is found from 700 m up to 1900 m on somewhat sunny spots, and especially abunds in the Pseudosasa Owatarii Association. It has its southern limit in this island.

Vaccinium, [LINN., Syst. ed. 1 (1735)] et Sp. Pl.

ed. 1. p. 349 (1753); ENDL., Gen. Pl. n. 4332 (1836-40); DC., Prodr. VII. p. 565 (1839); BENTH. et HOOK. f., Gen. Pl. II. p. 573 (1876); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 51 (1889) p.p.; NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 234 (1927)

Syn. *Arbutus*, HILL., Brit. Herbal. p. 518 (1756)

Vaccinium bracteatum, THUNB., Fl. Jap. p. 156 (1784); DC., Prodr. VII. p. 573 (1839); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 129 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 29 (1863), et II. p. 160 (1866); MAXIM., in Mél. Biolog. VIII. p. 608 (1872); FR. et SAV., Enum. Pl. Jap. I. p. 282 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 14 (1889) p.p.; NAK., Fl. Kor. II. p. 71 (1911), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 241 f. 114 (1927); MATSUM., Ind. Pl. Jap. II. 2. p. 466 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 106 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 894 (1931)

Syn. *Vaccinium Buergeri*, MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 29 (1863)

Vaccinium Donianum, var. *elliptica*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 161 (1866)

| Names of Plants | Regions | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|-----------------------|------------|--------------|--------|--------|--------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū |
| | | | | | | | | | | | |
| Rhododendron yakushmanum, NAK. | | | | | | | | | | | |
| Menziesia purpurea, MAXIM. | | | | | | | | + | | + | |
| Pieris japonica, D. DON | | | | | | | | + | + | + | |
| Vaccinium bracteatum, THUNB. | | | | | | | + | + | + | + | |
| V. b. var. lanceolatum, NAK. | | | | | | | | + | | | |
| Vaccinium yakushimense, MAK. | | | | | | | | | | | |
| Total | | | | 2 | 2 | | 2 | 9 | 3 | 4 | 1 |
| Percentage | | | | 14 | 14 | | 14 | 64 | 21 | 29 | 7 |
| (Southern elements 2) | | | | | | (Northern elements 9) | | | | | |

From the above table it will be perceived that the island has more numerous representatives of the northern lands than of the southern ones, and *Tripetaleria*, a distinct genus of this family, has its southern limit in this island. These facts make it possible to assert that the so called WATASE's line of zoogeographers possesses also a profound significance in phytogeography. And since endemic species and varieties are plentiful in this island, the island is somewhat independent with regard to the phytogeography of *Ericaceae*.

Ardisiaceae

Ardisiaceae, A. RICHARD., in Dict. Class. Hist. Nat. I. p. 530 (1822)

Syn. *Myrsinaceae*, LINDL., Nat. Syst. ed. 2. p. 224 (1836)

Maesa, FORSK., Fl. Aegypt-Arab. p. 66 (1775);

ENDL., Gen. Pl. n. 4227 (1836-40); DC., Prodr. VIII. p. 77 (1844); C. B. CLARKE,

in HOOK. f. Fl. Brit. Ind. III. p. 507 (1882); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 95 (1889); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft. 9) p. 15 (1902); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 255 (1932)

Syn. *Baeobotrys*, FORST, Char. Gen. p. 21, t. 11 (1776)

Doraena, THUNB., Nov. Gen. Pl. III. p. 59 (1783), et Pl. Jap. p. 6 (1784); ROEM. et SCHULT., Syst. Veg. IV. p. XVIII. et 188 (1819); SPRENG., Syst. Veg. I. p. 671 (1825)

Baeobotris, BL., Bijdr. p. 864 (1825-26)

Maesa japonica, MORITZI, ex ZOLLINGER, Syst. Verz. Ind. Arch. Pfl. p. 61 (1854); MEZ, in Engl. Pfl.-reich. IV. 236 (Heft. 9) p. 50 (1902); MATSUM., Ind. Pl. Jap. II. 2. p. 473 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 204 (1924); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 291, f. 138 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 902 (1931)

Syn. *Doraena japonica*, THUNB., Nov. Gen. Pl. III. p. 54 (1783), Fl. Jap. p. 84 (1784), et Ic. Pl. Jap. Dec. 3, t. 5 (1775)

Maesa Doraena, BL., ex SIEB. et ZUCC. Fl. Jap. Fam. Nat. II. p. 138 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 263 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 304 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 59 (1889); MATSUM. et HAY., Enum. Pl. Formos. p. 224 (1906)

Maesa coriacea, CHAMP.; BENTH., Fl. Hongk. p. 204 (1861)

Baeobotrys japonica, ZIPP. et SCHEFF., Comm. Myrs. Archip. Ind. p. 18 (1867)

Nom. Jap. *Izusenryô*

Leg. Ipse, Jun. 7, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is found in the laurisilvae or in the lauri-aculisilvae near the sea level.

var. *elongata*, MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft. 9) p. 51 (1902); CHUN., Cat. Tree. & Shrub. Chin. p. 204 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 902 (1931)

Syn. *Maesa randaiensis*, HAY., Mat. Fl. Formos. p. 177 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 902 (1931)

Nom. Jap. *Nagaba-izusenryô*

Leg. Ipse, Kosugidani.

Distr. Kyûsyû, Taiwan, China.

Note. Grows under the same condition as the previous species, but more plentifully in the laurisilvae.

Maesa sinensis, A. DC., in Ann. Sc. Nat. 2. sér. XVI. p. 80 (1841), et in DC. Prodr. VIII. p. 82 (1844); BENTH., Fl. Hongk. p. 203 (1861); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft. 9) p. 34 (1902); MATSUM. et HAY., Enum. Pl. Formos. p. 225 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 473 (1912); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 158 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 204 (1924); MERR., Enum. Hainan Pl. p. 142 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 902 (1931)

Nom. Jap. *Sima-izusenryô*

Leg. A. KIMURA! Aug. 9, 1922.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The plant grows near river sides in the laurisilvae from the sea level up to about 500 m.

- Bladhia**, THUNB., Nov. Gen. Pl. I. p. 78, t. I (1781), et Hist. Pl. Gui. Fr. III. Supp. 1. t. 368 (1775), et Fl. Jap. p. 7 (1784); ROEM. et SCHULT., Syst. Veg. IV. pp. XLVII. et 512 (1819)
- Syn.** *Tinus*, [BURM., Thes. Zeyl. p. 222, t. 103 (1737)] O. KUNTZE, Rev. Gen. Pl. II. p. 404 (1891)
- Badulam*, LINN., Fl. Zeyl. p. 23 (1747)
- Ardisia*, SWARTZ, Prodr. Veg. Occ. p. 48 (1788), et Fl. Ind. Occ. I. p. 467, t. 10 (1797); ROEM. et SCHULT., Syst. Veg. IV. pp. XLVII. et 513 (1819); ENDL., Gen. Pl. n. 4222 (1836-40); DC., Prodr. VIII. p. 120 (1844); BENTH. et HOOK. f., Gen. II. pp. 645 et 646 (1876); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 93 (1889); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 57 (1902)
- Pyrgus*, LOUR., Fl. Cochinch. I. p. 120 (1790)
- Anguillaria*, LAM., Illustr. II. p. 109 (1793); POIR., Encycl. VII. p. 684 (1806)
- Pimelandra*, A. DC., in Ann. Sc. Nat. 2. sér. XVI. p. 79 (1841), et in DC., Prodr. VIII. p. 106 (1844)

Bladhia crispa, THUNB., in Nov. Act. Reg. Soc. Sc. Upsal. IV. pp. 31, 37 (1783), et Fl. Jap. p. 97 (1784); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 285 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929)

- Syn.** *Ardisia punctata*, LINDL., in Bot. Reg. t. 827 (1824)
- Ardisia hortorum*, MAXIM. et REGEL., in Gartenfl. XIV. p. 363, t. 491 (1865); MAK., in Tokyo Bot. Mag. VIII. p. 381 (1894); MATSUM. et HAY., Enum. Pl. Formos. p. 227 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 472 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 900 (1931)
- Ardisia tachibana*, MAK., in Tokyo Bot. Mag. VI. p. 53 (1892)
- Ardisia simplicicaulis*, HAY., Mat. Fl. Formos. p. 183 (1911)
- Bladhia punctata*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. I. p. 209 (1922)

Nom. Jap. *Karatatibana*

Leg. Ipse, Nagata, Mart. 22, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China.

Note. The species grows as undergrowth in the laurisilvae or in the lauriculilvae.

Bladhia japonica, THUNB., Nov. Gen. I. p. 7, t. 1 (1781), et Fl. Jap. p. 95, t. 18 (1784); LAM., Ill. t. 133 f. 1 (1823); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 277, f. 130 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929)

- Syn.** *Ardisia japonica*, BL., in Bijdr. XI. p. 690 (1825); DC., Prodr. VIII. p. 135 (1844); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 190 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 305 (1875); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 151 (1902); NAK., Fl. Kor. II. p. 84 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 472 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 204 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 900 (1931)

Ardisia montana, SIEB., ex MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 263 (1866)

Nom. Jap. *Yabukôzi*

Leg. Ipse, Jul. 15, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China.

Note. The species is found in the lauri-aciculisilvae.

var. *angusta*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. p. 203 (1922), et ed. 2. p. 279 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929)

Syn. *Ardisia japonica*, var. *angusta* (NAK.) MAK. et NEM., Fl. Jap. ed. 2. p. 900 (1931)

Nom. Jap. *Hosoba-yabukôzi*

Leg. Ipse, April. 1, 1928.

Distr. Honsyû, Kyûsyû.

Note. This variety is found as undergrowth in the lauri-aciculisilvae at about 700 m above the sea level.

Bladhia lentiginosa, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 283 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929)

Syn. *Ardisia crenata*, (non ROXB.) SIM., in Bot. Mag. t. 1950 (1817); MATSUM. et HAY., Enum. Pl. Formos. p. 225 (1906)

Ardisia lentiginosa, KRE, in Bot. Regist. VII. t. 533. (1821)

Ardisia glandulosa, (non ROXB.) BL., Bijdr. p. 684 (1825)

Ardisia crispa, A. DC., in Trans. Linn. Soc. XVII. p. 124 (1837), et DC., Prodr. VIII. p. 134 (1844) excl. β ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 190 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 304 (1875); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 144 (1902); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 160 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 471 (1912); MORI, Enum. Pl. Cor. p. 281 (1922); MERR., Enum. Hainan Pl. p. 143 (1927); CHUN., Cat. Tree. & Shrub. Chin. p. 204 (1924); MERR., Enum. Hainan Pl. p. 143 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 899 (1931)

Bladhia elegans, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 308 (1925) excl. syn.

Nom. Jap. *Manryô*

Leg. Ipse, Mart. 19, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species is found as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

Bladhia quinqueгона, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. 1. p. 212 (1922), et ed. 2. p. 288 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929)

Syn. *Ardisia quinqueгона*, BL., Bijdr. p. 699 (1826); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 108 (1902); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 160 (1912); CHUN., Cat. Tree. & Shrub. Chin. p. 205 (1924); MERR., Enum. Hainan Pl. p. 143 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 900 (1931)

Ardisia pentagona, A. DC., in Trans. Linn. Soc. XVII. p. 124 (1834), et in DC. Prodr. VIII. p. 135 (1844); FORB. et HEMSL., Ind. Fl. Sin. II. p. 66 (1889); MATSUM. et HAY., Enum. Pl. Formos. p. 226 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 472 (1912)

Ardisia pauciflora, DC., Prodr. VIII. p. 127 (1844); BENTH., Fl. Hongk. p. 206 (1861)

Nom. Jap. *Sisiakuti*

Leg. Ipse, Jul. 21, 1924.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. It grows in the laurisilvae near the sea level.

Bladhia Sieboldii, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. p. 210 (1922), ed. 2. p. 287 (1927), et in Bull. Biogeogr. Soc. Jap. I. p. 261 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929)

Syn. *Ardisia Sieboldii*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 190 (1867); FORB. et HEMSL., Ind. Fl. Sin. II. p. 67 (1889); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 105 (1902); MATSUM. et HAY., Enum. Pl. Formos. p. 226 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 472 (1912); MAK. et NEM., Fl. Jap. ed. 2, p. 901 (1931)

Tinus Sieboldii, O. KUNTZE, Rev. Gen. Pl. II. p. 975 (1891)

Nom. Jap. *Mokutatibana*

Leg. Ipse, Nakama, Mart. 23, 1923.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China.

Note. The species is found in the littoral forests.

Bladhia villosa, THUNB., Fl. Jap. p. 96. t. 19 (1784); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 281 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929)

Syn. *Ardisia pusilla*, A. DC., in Trans. Linn. Soc. XVII. p. 125 (1834, et in DC. Prodr. VIII. p. 137 (1844); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 190 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 305 (1875); MORI, Enum. Pl. Cor. p. 281 (1922)

Ardisia villosa, MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 152 (1902); MATSUM., Ind. Pl. Jap. II. 2. p. 473 (1912); RIDLEY, Fl. Malay. II. p. 251 (1923); CHUN., Cat. Tree. & Shrub. Chin. p. 205 (1924); MERR., Enum. Hainan Pl. p. 144 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 901 (1931)

Nom. Jap. *Turu-kôzi*

Leg. Ipse, Kurio, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. This species is collected in the laurisilvae and in the lauri-aciculisilvae from the sea level up to about 1000 m.

var. *hiukiensis*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. I. p. 206 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 901 (1931)

Nom. Jap. *Ryûkyû-turukôzi*

Leg. Ipse, Jul. 14, 1922.

Distr. Okinawa, Taiwan.

Note. The plant is found in the laurisilvae as undergrowth, and has its northern limit of habitat in this island.

Anantia, KOIDZ., in Tokyo Bot. Mag. XXXVII. p. 39 (1923)

Anantia stolonifera, KOIDZ., in Tokyo Bot. Mag. XXXVII. p. 40 (1923); MASAMUNE, in Journ. Trop. Agr. III. p. 22 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 898 (1931)

Syn. *Anantia marginata*, (non MEZ) MASAMUNE, Prel. Rep. Veg. Yak. p. 107 (1929), et in Journ. Trop. Agr. II. p. 50 (1930)

Nom. Jap. *Turu-manryô*

Leg. Ipse, ca. Ebosidake, Jul. 25, 1928.

Distr. Honsyû, Taiwan.

Note. It is found in the lauri-aciculisilvae from about 600 m up to 1200 m above the sea level.

Rapanea, AUBL., Hist. Pl. Gui. Fr. i. p. 121, t. 46 (1775); JUSS., Gen. Pl. p. 288 (1789); MEZ, in ENGL. Pfl.-reich. IV. 236 (Heft 9) p. 342 (1902)

Syn. *Ageria*, ADANS., Fam. II. p. 166 (1763)

Myrsine, R. BR., Prodr. I. p. 533 (1810) p.m.; DC., Prodr. VIII. p. 92 (1844) p.m.; LINDL., Veg. Kingd. p. 648 (1847) p.m.; HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 642 (1876) p.m.; PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 92 (1889) p.m.

Rapanea neriifolia, MEZ, in ENGL. Pfl.-reich. IV. 236 Heft 9 p. 361 1902; MATSUM., Ind. Pl. Jap. II. 2. p. 473 (1912); CHUN., Tree. & Shrub. Chin. p. 206 (1924); NAK.,

| Names of Plants | Regions | | | | | | | | | |
|---|-----------------------|--------|---------|-------------|------------------------|--------------|--------|--------|--------|--|
| | Philippines Bonins | Taiwan | Okinawa | Amami-Osima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea Yezo & Southern Kuriles Saghalien Northern Kuriles & Kamchatka Manchuria, Amur & Ussuri China |
| <i>Maesa japonica</i> , MORITZ. et ZOLLING. | + | + | + | + | + | + | + | + | | + |
| <i>M. j.</i> var. <i>elongata</i> , MEZ. | + | | | | | | + | | | + |
| <i>Maesa sinensis</i> , A. DC. | + | + | + | + | | | + | | | + |
| <i>Bladhia crispa</i> , THUNB. | | + | + | | | | + | + | + | + |
| <i>Bladhia japonica</i> , THUNB. | + | | | + | + | + | + | + | + | + |
| <i>B. j.</i> var. <i>angusta</i> , NAK. | | | | | | + | | + | | |
| <i>Bladhia lentiginosa</i> , NAK. | + | + | + | + | + | + | + | + | + | + |
| <i>Bladhia quinqueгона</i> , NAK. | + | + | + | + | + | | | | | + |
| <i>Bladhia Sieboldii</i> , NAK. | + | + | + | + | + | + | | | | + |
| <i>Bladhia villosa</i> , THUNB. | | | | + | + | + | + | + | + | + |
| <i>B. v.</i> var. <i>liukuensis</i> , NAK. | + | + | | | | | | | | |
| <i>Anantia stolonifera</i> , KOIDZ. | + | | | | | | | + | | |
| <i>Rapanea neriifolia</i> , MEZ. | + | + | + | + | + | + | + | + | | + |
| Total 13 | 111 | 8 | 8 | 7 | 10 | 6 | 8 | 3 | 1 | 10 |
| Percentage | 885 | 62 | 62 | 54 | 77 | 46 | 62 | 23 | 8 | 77 |
| (Southern elements 12) | | | | | (Northern elements 12) | | | | | |

in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 294 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 903 (1931)

Syn. *Myrsine neriifolia*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 137 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 190 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 304 (1875)

Myrsine capitellata, (non WALL.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 262 (1866); FORB. et HEMSL., Ind. Fl. Sin. II. p. 61 (1889); MATSUM. et HAY., Enum. Pl. Formos. p. 225 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 474 (1912)

Nom. Jap. *Taimin-tatibana*

Leg. Ipse, ca. Nagata, Mart. 21, 1923.

Distr. Honsyû, Sikoku, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. It is found as a component of the laurisilvae from the sea level up to about 300 m.

In this family the island shows more or less of a close relationship with the islands of Kyûsyû and Taiwan.

Primulaceae

Primulaceae, VENT., Tabl. II. p. 285 (1799)

Lysimachia, [TOURN., Inst. p. 59 (1700); LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 146 (1753); ENDL., Gen. Pl. n. 4207 (1836-40); DUBY, in DC. Prodr. VIII. p. 60 (1844); BENTH. et HOOK. f., Gen. Pl. II. p. 635 (1876); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 112 (1889); PAX u. KUNTH., in ENGL. Pfl.-reich. IV. 237 (Heft 22) p. 256 (1905); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 215 (1932)

Syn. *Lisma*, MEDIC, Phil. Bot. II. pp. 59, et 107 (1791)

Lysimachia decurrens, FORST. f., Fl. Ins. Kust. Prodr. p. 12 (1786); LAM., Ill. des Genres. p. 441 (1791); FORB. et HEMSL., Ind. Fl. Sin. II. p. 51 (1889); DIELS, Fl. Cent. Chin. p. 523 (1900); PAX u. KUNTH, in ENGL. Pfl.-reich. IV. 237 (Heft 22) p. 256 (1905); MERR., Enum. Philipp. Pl. III. p. 274 (1923)

Syn. *Lysimachia javanica*, BL., Fl. Ned. Ind. p. 736 (1825); DUBY, in DC. Prodr. VIII. p. 62 (1844); MIQ., Fl. Ind. Bat. II. p. 1002 (1856); HOOK. f., Fl. Brit. Ind. III. p. 502 (1882)

Lysimachia sinica, MIQ., in Journ. Bot. Neerl. I. p. 110 (1861)

Lysimachia consobrina, HANCE, in Ann. Sc. Nat. 5. sér. V. p. 224 (1866)

Lysimachia decurrens, var. *recurvata*, MATSUM., in Tokyo Bot. Mag. XIV. p. 71 (1900)

Lysimachia acroadenia, MAXIM. var. *recurvata*, MAK. et NEM., Fl. Jap. p. 384 (1925), et ed. 2. p. 905 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929)

Lysimachia recurvata, MASAMUNE, in Journ. Trop. Agr. IV. p. 302 (1932)

Nom. Jap. *Sima-ginreisô*

Leg. Ipse, Hirauti, Jun. 29, 1928.

Distr. Amami-Ôsima, Okinawa, Taiwan, China, Philippines, India, Java.

Note. The plant is rarely found on the forest edges of the laurisilvae near the sea level, and is not reported further north than this island.

Lysimachia Fortunei, MAXIM., in Mém. Biol. VI. p. 270 (1867), et in Bull. Acad. Petersb. XII. p. 68 (1868); FR. et SAV., Enum. Pl. Jap. I. p. 301 (1875); ENGL. u. MAXIM., in ENGL. Bot. Jahrb. VI. p. 64 (1885); FORB. et HESML., Ind. Fl. Sin. II. p. 52 (1889); PAX u. KUNTH, in ENGL. Pfl.-reich. IV. p. 237 (Heft 22) p. 260 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 222 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 476 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 906 (1931)

Nom. Jap. *Numa-toranô*

Leg. Ipse, Miyanoura, Aug. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China.

Note. The species is found in rice fields or in cultivated lands.

Lysimachia japonica, THUNB., Fl. Jap. p. 83 (1784); LAM., Ill. Genres. p. 440 (1791); DUBY, in DC. Prodr. VIII. p. 67 (1844); PAX u. KUNTH, in ENGL. Pfl.-reich. IV. 237 (Heft 22) p. 262 (1905); MATSUM., Ind. Pl. Jap. II. 2. p. 476 (1912); MORI, Enum. Pl. Cor. p. 282 (1922); MERR., Enum. Philip. Pl. III. p. 275 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 906 (1931)

Syn. *Lysimachia maculata*, R. BR., Prodr. p. 428 (1810)

Lysimachia debilis, WALL., in ROXB. Fl. Ind. ed. CAREY II. p. 25 (1824); D. DON, Prodr. p. 83 (1825)

Nom. Jap. *Konasubi*

Leg. Ipse, Ambô, Aug. 30, 1931.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Philippines.

Note. The species is found in open waste lands. It is a pure eastern asiatic species and common in Japan.

var. *minutissima*, MASAMUNE, Prel. Rep. Veg. Yak. p. 108 (1929), et in Journ. Trop. Agr. IV. p. 195 (1932)

Nom. Jap. *Hime-konasubi*

Leg. Ipse, Aug. 1, 1924.

Distr. Endemica.

Note. The species is found in the higher zones in the Pseudosasa Owatarii Association.

Lysimachia mauritiana, LAM., Encycl. III. p. 592 (1789); PAX u. KUNTH, in ENGL. Pfl.-reich. IV. 237 (Heft 22) p. 273, f. 58 (1905); NAK., Fl. Kor. II. p. 82 (1911), et in Biogeogr. Soc. Jap. I. p. 261 (1930); DUNN et TUTCH., Fl. Kwant. & Hongk. p. 157 (1912); LOESN., Pfl.-welt Kiautch. Geb. p. 165 (1918); MERR., Enum. Philipp. Pl. III. p. 275 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 109 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 906 (1931)

Syn. *Lysimachia lineariloba*, HOOK. et ARN., Bot. Cap. Beech. Voy. p. 268 (1836-40); DUBY, in DC. Prodr. VIII. p. 61 (1844); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 121 (1867); BENTH. et HOOK. f., Gen. Pl. II. p. 635 (1873); FORB. et HESML., Ind. Fl. Sin. II. p. 53 (1889); KOM., Fl. Mansh. III. p. 237 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 477 (1912)

Lysimachia lubinioides, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 140 (1846); FR. et SAV., Enum. Pl. Jap. I. p. 302 (1875)

| Name of Plant | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------|--------------|--------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>Statice arbuscula</i> , MAXIM. | + | + | + | + | + | | | | + | | | |

When the distribution of *Statice*, the only representative genus of *Plumbaginaceae* in the island is considered, the island shows no special affinity with its neighbouring districts. But *Statice arbuscula* shows some affinity with the southern lands, for the species occurs on extremely rare occasions in Japan proper.

Ebenacēae

Ebenaceae, VENT., Tabl. II. p. 443 (1799) p.p.; JUSS., in Ann. Mus. Paris. V. p. 417 (1804)

Diospyros, [LINN., Gen. Pl. ed. 1. p. 143 (1737)]
et Sp. Pl. ed. 1. p. 1057 (1753); ENDL., Gen. Pl. n. 4249 (1836-40); DC., Prodr. VIII. p. 222 (1844); BENTH. et HOOK. f., Gen. Pl. II. p. 665 (1876); GÜRKE., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 161 (1890); LEMÉE, Dict. Gen. Pl. Phan. II. p. 642 (1930)

Syn. Lotus, [CAMERARIUS, Epistola p. 157 (1694)]

Diospyros Kuroiwai, NAK., in Tokyo Bot. Mag. XXXV. p. 136 (1921); MAK. et NEM., Fl. Jap. ed. 2. p. 916 (1931)

Nom. Jap. Ryūkyū-mamegaki

Leg. Ipse, Kosugidani, Sept. 1, 1926.

Distr. Amami-Ōshima, Okinawa.

Note. I have found this species in the laurisilvae near the sea level, and it has its northern limit in this island.

Diospyros nipponica, NAK., in Tokyo Bot. Mag. XXXV. p. 137 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 300 f. 141 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 109 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 917 (1931)

Syn. Diospyros Morrisiana, (non HANCE) FR. et SAV., Enum. Pl. Jap. I. p. 307 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 485 (1912)

Distr. Honsyû, Sikoku, Kyûsyû, Korea.

Note. The species is found in the lauri-aciculisilvae from almost 1500 m up to 1800 m above the sea level, and has its southern limit in this island.

Pobua, DC., Prodr. III. p. 23 (1828); MIERS, in Journ. Linn. Soc. XVII. p. 303 (1879); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 314 (1927)

Syn. *Bobu*, [HERMANN, Mus. Zeylan. p. 9 (1717)] ADANS., Fam. II. p. 88 (1763)

Symplocos, Sect. *Lodhra*, G. DON, Gen. Hist. Dichlam. Pl. IV. p. 2 (1838)

Symplocos, BENTH. et HOOK. f., Gen. Pl. II. 2. p. 668 (1876) p.p.

Symplocos, Subg. *Hopea*, Sect. *Palaeosymplocos*, BRAND., Sympl. p. 30 (1901) p.p.

Pobua glauca, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 322 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 109 (1929)

Syn. *Laurus glauca*, THUNB., in Nov. Act. Reg. Soc. Ups. IV. p. 37 (1783), et Fl. Jap. p. 173 (1784)

Symplocos neriifolia, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 134 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 102 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 308 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 73 (1889); BRAND., in Engl. Pfl.-reich. IV. 242 (Heft 6) p. 69 (1901); MATSUM. et HAY., Enum. Pl. Formos. p. 231 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 488 (1912)

Bobua neriifolia, SIEB. et ZUCC., apud MIERS., in Journ. Linn. Soc. XVII. p. 306 (1879)

Myrsine Thunbergii, TANAKA, in Mém. Papers of 150 Annive. Thunb. Journ. Jap. p. 34 (1925)

Symplocos glauca, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 313 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 919 (1931)

Nom. Jap. *Mimizubai*

Leg. Ipse, April. 7, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is found in the laurisilvae.

Pobua japonica, MIERS., in Journ. Linn. Soc. Bot. XVII. p. 306 (1879); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 315 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929)

Syn. *Laurus lucida*, THUNB., Fl. Jap. p. 174 (1784)

Hopea lucida, THUNB., Ic. Pl. Jap. Decas. II. t. 4 (1800)

Symplocos lucida, (non WALL. nec BROUGNIART) SIEB. et ZUCC., Fl. Jap. p. 55, t. 24 (1835); MATSUM., Ind. Pl. Jap. II. 2. p. 487 (1912)

Symplocos japonica, DC., Prodr. VIII. p. 255 (1844); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 133 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 101 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 307 (1875); BRAND., in Engl. Pfl.-reich. IV. 242 (Heft 6) p. 31 (1901); MORI, Enum. Pl. Cor. p. 284 (1922)

Nom. Jap. *Kurcki*

Leg. Ipse, Onoaida, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea.

Note. This tree is found from the sea level up to about 500 m.

Pobua kotoensis, YAMAMOTO, Supp. Ic. Pl. Formos. IV. p. 19 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929)

Syn. *Symplocos kotoensis*, HAY., Ic. Pl. Formos. V. p. 106, f. 31 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 920 (1931)

Symplocos spicata, (non ROXB.) HAY., Ic. Pl. Formos. V. p. 115 (1915)

Bobua lithocarpoides, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. I. p. 243 (1922), et ed. 2. p. 326, f. 153 (1927)

Nom. Jap. *Aoba-no-ki*

Leg. Ipse, Jul. 21, 1924.

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan.

Note. The species grows in the laurisilvae at low altitudes.

Bobua myrtacea, SIEB. et ZUCC., apud MIERS. in Journ. Linn. Soc. XVII. p. 306 (1879; NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 319 (1927; MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929

Syn. *Symplocos myrtacea*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 133 (1846; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 103 (1867; FORB. et HEMSL., Ind. Fl. Sin. II. p. 73 (1889; MATSUM. et HAY., Enum. Pl. Formos. p. 58 (1906; MAK. et NEM., Fl. Jap. ed. 2. p. 922 (1931)

Nom. Jap. *Hainoki*

Leg. Ipse, Hananoego, Jun. 12, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Taiwan.

Note. The species grows as a representative of the lauri-aciculsilvae from 700 m up to 1800 m above the sea level.

Bobua prunifolia, SIEB. et ZUCC., apud MIERS. in Journ. Linn. Soc. XVII. p. 306 (1879; NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 317 (1927

Syn. *Symplocos prunifolia*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 133 (1846; FR. et SAV., Enum. Pl. Jap. I. p. 308 (1875; MAK. et NEM., Fl. Jap. ed. 2. p. 922 (1931

Symplocos caudata, WALL.; MATSUM., Ind. Pl. Jap. II. 2. p. 485 (1912

Nom. Jap. *Kuroba*

Leg. Sitogo, Aug. 19, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Okinawa, Korea (Quelp.

Note. It grows in the laurisilvae from the sea level up to about 500 m.

Bobua Tanakae, MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929)

Syn. *Symplocos Tanakae*, MATSUM., in Tokyo Bot. Mag. XV. p. 79 (1901; MAK. et NEM., Fl. Jap. ed. 2. p. 922 (1931)

Nom. Jap. *Nagaba-no-kuroki*

Leg. Ipse, Aikodake, Aug. 1, 1924.

Distr. Sikoku, Tanegasima.

Note. The species is found in the laurisilvae and in the lauri-aciculsilvae from 400 m up to 1300 m above the sea level, and is not yet found in lands further south than Yakusima.

Of the seven representatives of *Symplocaceae* plants indigenous to this island, two have their southern limit in this island. From this point of view the island is said to be closely related to the northern floral regions beyond Yakusima.

| Names of Plants | Regions | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|----------------------|------------|--------------|--------|--------|--------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū |
| | | | | | | | | | | | |
| <i>Palura argutidens</i> , NAK. | | | | | | | | + | + | + | + |
| <i>Bobua glauca</i> , NAK. | | + | + | + | + | + | + | + | + | + | + |
| <i>Bobua japonica</i> , MIERS. | | | | | + | + | + | + | + | + | + |
| <i>Bobua kotoensis</i> , YAMAMOTO | | + | + | + | + | | | | | | |
| <i>Bobua myrtacea</i> , SIEB. et ZUCC. | | | | | | | | + | + | + | |
| <i>Bobua prunifolia</i> , SIEB. et ZUCC. | | | | + | + | | | + | + | + | + |
| <i>Bobua Tanakae</i> , MASAMUNE. | | | | | | | + | | + | | |
| Total | 7 | 2 | 3 | 4 | 4 | 5 | 6 | 5 | 3 | | |
| Percentage | | 29 | 43 | 57 | 57 | 71 | 86 | 71 | 43 | | |
| (Southern elements 4) | | | | | | (Northern element 7) | | | | | |

Styracaceae

Styracaceae, DC., in Prodr. VIII. p. 244 (1844)

Styrax, [TOURN., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 143 (1737)] et Sp. Pl. ed. 1. p. 444 (1753); DC., Prodr. VIII. p. 259 (1844); ENDL., Gen. Pl. n. 4252 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 669 (1876) p.p.; GÜRKE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. i. p. 177 (1890); PERKINS, in ENGL. Pfl.-reich. IV. 241 (Heft. 30) p. 17 (1907)

Syn. Trichogamila, P. BR., Hist. Jam. p. 218 (1756)

Cyrta, LOUR., Fl. Cochinch. p. 278 (1790)

Tremanthus, PERS., Synops. I. p. 467 (1805)

Styrax japonicum, SIEB. et ZUCC., Fl. Jap. I. p. 53, t. 23 (1837); DC., Prodr. VIII. p. 266 (1844); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 101 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 309 (1875); DIPPEL, Handb. Laubholz. I. p. 318, f. 207 (1889); FORB. et HEMSL., Ind. Fl. Sin. II. p. 76 (1889); PERKINS, in ENGL. Pfl.-reich. IV.

- 241 (Heft. 30) p. 73 (1907); NAK., Fl. Kor. II. p. 86 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 490 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 927 (1931)
- Syn.** *Styrax serrulatus*, (non ROXB.) HOOK. f., in Bot. Mag. t. 5950 (1850)
- Cyrta japonica*, MIERs., Contr. Bot. I. p. 182 (1851)
- Nom. Jap. Egonoki**
- Leg.** Ipse, Kurio, Mart. 23, 1923.
- Distr.** Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, China.
- Note.** This tree is found as an invader in waste lands near the sea level.

| Name of Plant | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|--------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | China |
| <i>Styrax japonica</i> , SIEB. et ZUCC. | | | | | + | + | + | + | + | + | + | + |

In this family the island is less closely related to Formosa than to the other regions (Okinawa, Amami-Ôsima and Japan proper).

Oleaceae

Oleaceae, LINDL., Nat. Syst. ed. 2. p. 307 (1836)

- Fraxinus**, [TOURN., ex LINN. Syst. ed. 1 (1735) et Sp. Pl. ed. 1. p. 1057 (1753); ENDL., Gen. Pl. n. 3353 (1836-40); DC., Prodr. VIII. p. 274 (1844); BENTH. et HOOK. f., Gen. Pl. II. p. 676 (1876); KNOBLAUCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 5 (1892); LINGELSHEIM, in ENGL. Pfl.-reich. IV. 243 (Heft. 72) p. 9 (1920)
- Syn.** *Fraxinoides*, MEDIK., in STAATSW. Vorles, Churph. Physioekon. Ges. I. p. 198 (1791)
- Calycamelia*, KOSTEL., All. Med.-Pharm. Fl. III. p. 1003 (1834)
- Fraxinus Sieboldiana**, BL. var. *serrata*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 391 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929); YAMAZUTA, List Manch. Pl. p. 221 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 932 (1931)
- Syn.** *Fraxinus longicuspis*, (non SIEB. et ZUCC.) FR. et SAV., Enum. Pl. Jap. I. p. 310 (1875); NAK., Fl. Kor. II. p. 87 (1911)
- Fraxinus longicuspis*, var. *Sieboldiana*, LINGELS, in ENGL. Pfl.-reich. IV. 243 (Heft. 72) p. 23 (1920)

Nom. Jap. *Kobano-toneriko*

Leg. Ipse, Miyanoura, Aug. 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The plant occurs on rare occasions in the island along river banks at low altitudes. It has its southern limit in this island.

Osmanthus, LOUR., Fl. Cochinch. p. 28 (1790);

ENDL., Gen. Pl. Supp. 1. p. 63 (1842); DC., Prodr. VIII. p. 291 (1844); BENTH. et HOOK. f., Gen. Pl. II. p. 677 (1876); KNOBLAUCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 9 (1892)

Osmanthus ilicifolius, STANDISH, Proc. Hort. Soc. Lond. II. p. 370 (1862); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 356, f. 166 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 939 (1931)

Syn. *Ilex aquifolium*, LINN., Sp. Pl. ed. 1. p. 125 (1753) p.p.; THUNB., Fl. Jap. p. 79 (1784)

Olea ilicifolia, HASSK., Cat. Pl. in Hort. Bogor. Cult. Alt. p. 118 (1844)

Osmanthus aquifolium, SIEB., ex SIEB. et ZUCC. Fl. Jap. Fam. Nat. II. p. 166 (1846); MATSUM., Ind. Pl. Jap. II. 2. p. 495 (1912)

Olea aquifolium, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 166 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 264 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 312 (1875)

Nom. Jap. *Hiragi*

Leg. Ipse, ca. Kosugidani, April. 5, 1927.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The plant is found on rare occasions in the laurisilvae or in the lauri-aculisilvae about 300 m up to 600 m above the sea level. It has its southern limit in this island.

Osmanthus Zentaroanus, MAK., in Journ. Jap. Bot. III. p. 8 (1926); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 348, f. 161 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 940 (1931)

Nom. Jap. *Nataorenoki*

Leg. Ipse, Kurio, Aug. 1, 1927.

Distr. Kyûsyû, Tanegasima, Nakanosima.

Note. The species is found in the laurisilvae from the sea level up to about 300 m and is rarely found in the lauri-aculisilvae.

Ligustrum, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 7 (1753); ENDL., Gen. Pl. n. 3352 (1836-40); DC., Prodr. VIII. p. 293 (1844); BENTH. et HOOK. f., Gen. Pl. II. p. 679 (1876); KNOBLAUCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 13 (1892); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 90 (1932)

Syn. *Faulia*, RAF., Fl. Tellur. II. p. 84 (1836)

Ligustridium, SPACH, Hist. Nat. Veg. Phaner. VIII. p. 371 (1839)

Ligustrum japonicum, THUNB., Nov. Act. Soc. Sc. Upsal. III. p. 207 (1780), et Fl. Jap. p. 17, t. 1 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 264 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 313 (1875), et II. p. 437 (1876); MATSUM., Ind. Pl. Jap. II. 2. p. 494 (1912); MORI, Enum. Pl. Cor. p. 287 (1922); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 385 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 110 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 935 (1931)

| Names of Plants | Regions | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------|-----------------------|--------|--------|-------|-------------------------|-----------|--------------------------------|-------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamitchatka | Manchuria, Amur & Usuri | China |
| <i>Ligustrum ovalifolium</i> , HASSK. | | | | | | | + | + | + | + | + | | | | |
| <i>Ligustrum salicinum</i> , NAK. | | | | | | | + | | + | + | | | | | |
| Total | | | | 1 | 2 | 2 | 6 | 4 | 5 | 4 | 3 | | | 1 | 1 |
| Percentage | | | | 17 | 33 | 33 | 100 | 67 | 83 | 67 | 50 | | | 17 | 17 |
| (Southern elements 2) | | | | | | | (Northern elements 6) | | | | | | | | |

Nom. Jap. *Yanagi-ibota*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Kyûsyû, Korea.

Note. It is found in the lowlands as a representative of the laurisilvae. It has its southern limit in this island.

With regard to this family, Yakusima has several species which have their southern limit in this island, and which occur rather commonly in the northern lands. The island therefore is closely related to lands further north than Yakusima if we take only this family into consideration.

Loganiaceae

Loganiaceae, LINDL., Nat. Syst. ed. 2. p. 306 (1836)

Mitrascme, LABILL., Nov. Holl. Pl. Sp. I. p. 35, t. 49 (1804); ENDL., Gen. Pl. n. 3566 ! (1836-40); DC., Prodr. IX. p. 9 (1845); BENTH. et HOOK. f., Gen. Pl. II. p. 790 (1876); SOLEREDER, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 35 (1892); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 503 (1932)
Syn. *Mitracme*, SCHULT., Mant. III. p. 67 (1827)

Mitrascme polymorpha, R. BR., Prodr. Fl. Austral. p. 452 (1810); DC., Prodr. IX. p. 10 (1845); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. IV. p. 80 (1883); FORB. et HEMS.,

Ind. Fl. Sin. II. p. 118 (1889); MATSUM., Ind. Pl. Jap. II. 2. p. 498 (1912); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 173 (1912); MERR., Enum. Philipp. Pl. III. p. 311 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 943 (1931)

Syn. *Mitrascme maiacensis*, WIGHT, Ic. Pl. Ind. Or. t. 1601 (1850)

Mitrascme capillaris, WALL.; BENTH., Fl. Hongk. p. 230 (1861); MATSUM. et HAY., Enum. Pl. Formos. p. 241 (1906); NAK., Fl. Kor. II. p. 96 (1911)

Nom. Jap. *Ainac*

Leg. Ipse, Aug. 31, 1931.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Philippines.

Note. The species is frequently found in fallow fields at low altitudes.

Gardneria, WALL., ex ROXBURGH Fl. Ind. ed.

CAREY I. p. 400 (1820); ENDL., Gen. Pl. n. 3361 (1836-40); DC., Prodr. IX. p. 19 (1845); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 798 (1867); SOLEREDER, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 41 (1892)

Gardneria nutans, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 165 (1846); FR. et SAV., Enum. Pl. Jap. I. p. 321 (1875); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. I. p. 315, f. 175 (1922), et ed. 2. I. p. 431, f. 207 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 943 (1931)

Syn. *Pseudogardneria nutans*, RACIB., in Anzeiger Akad. Wissensch. Krakow (1896)

Nom. Jap. *Hôrai-kazura*

Leg. Ipse, Jul. 16, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa.

Note. The species is found in forests or on forest edges in the laurisilvae or the lower part of the lauri-aciculisilvae.

Fuddleia, [HOUST., ex LINN. Gen. Pl. ed. 1. p. 26

(1737)] et Sp. Pl. ed. 1. p. 112 (1753); ENDL., Gen. Pl. n. 3971 (1836-40); BENTH., in DC. Prodr. X. p. 433 (1846), et in BENTH. et HOOK. f. Gen. Pl. II. p. 793 (1876); SOLEREDER, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 46 (1892); LEMÉE, Dict. Gen. Pl. Phan. I. p. 707 (1929)

Syn. *Toxna*, NOR., in Verh. Bot. Gen. V. Art. IV. p. 4 (1790)

Fuddleia curviflora, HOOK. et ARNOT. var. *vernifera*, MAK., in Tokyo Bot. Mag. XXV. p. 156 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 942 (1931)

Nom. Jap. *Urazirohuziutugi*

Leg. Ipse, Jul. 14, 1922.

Distr. Tanegasima, Nakanosima, Kutinoerabu, Amami-Ôsima.

Note. The species is found in somewhat sunny spots near the sea level, and is endemic to this island and to the above cited regions which compose the northern part of the Ryûkyû archipelago.

Considering the distribution of the representatives of the *Loganiaceae* plants indigenous to this island, the island is more closely related to Amami-Ôsima and Kyûsyû than to the other floral regions, and is less so to Formosa.

| Names of Plants | Regions | | | | | |
|--|-------------|--------|--------|---------|---------|--------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Ryūkyūs | Amami-Oshima |
| Mitrasacme polymorpha, R. BR. | + | + | + | + | + | + |
| Gardneria nutans, SIEB. et ZUCC. | | | | + | | |
| Buddleia curviflora, HOOK. et ARN. var. vernifera, MAK. | | | | + | | + |
| | | | | | Kyūsyū | Tanegasima |
| | | | | | | Kyūsyū Prop. |
| | | | | | Sikoku | Honsyū |
| | | | | | | Korea |
| | | | | | | Yezo & Southern Kuriles |
| | | | | | | Saghalien |
| | | | | | | Northern Kuriles & Kamitchatka |
| | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | China |

Gentianaceae

Gentianaceae, DUMORT, Anal. Famil. p. 20, t. 25 (1829)

Erythraea, (RENEALM ex BORKH. in ROEMER Arch. I. p. 1 '1796 ; L. C. RICH, in PERSOON Synop. I. p. 283 1805 ; ENDL., Gen. Pl. n. 3543 (1836-40 ; GRISEB., in DC. Prodr. IX. p. 57 1845 ; BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 809 1876 ; GILG, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 73 (1895) ; LEMEE, Dict. Gen. Pl. Phan. III. p. 9 (1931)

Sgn. *Centaurodes*, [MOEHR, Hort. Priv. p. 109 (1763) O. KUNTZE, Rev. Gen. Pl. II. p. 426 (1891)]

Erythraea spicata, (LINN.) PERS., Synop. I. p. 283 (1805); DC., Prodr. IX. p. 60 (1845); MERR., Enum. Philipp. Pl. III. p. 317 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 945 (1931)

Syn. *Gentiana spicata*, LINN., Sp. Pl. ed. 1. p. 230 (1753)

Erythraea australis, R. BR.; HAY., Mat. Fl. Formos. p. 200 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 499 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929)

Nom. Jap. *Hôraisenburi*

Lcg. Ipse, Kurio, Jul. 4, 1928.

Distr. Amami-Ôsima, Okinawa, Taiwan, Philippines.

Note. This littoral plant grows on rocks especially on coral. It has its northern limit in this island.

Crawfordia, WALL., Tent. Fl. Nepal. II. p. 63, tt. 47, 48 (1826; ENDL., Gen. Pl. n. 3556 (1836-40); DC., Prodr. IX. p. 120 (1845); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 815 (1876); GILG, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 78 1835; LEMÉE, Dict. Gen. Pl. Phan. II. p. 363 (1930))

Syn. Golowninia, MAXIM., in Bull. Acad. St. Pet. IV. p. 252 (1862)

Crawfurdia japonica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 160 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 124 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 324 (1875); MAXIM., in Mém. Biolog. IX. p. 399 (1874); MIY., Fl. Kurile. p. 251 (1890); MASAMUNE, Prel. Rep. Veg. Yak. p. 111 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 944 (1931)

Syn. *Golwinia japonica*, MAXIM., in Mém. Biol. IV. p. 37, cum. Ic. (1861)
Crawfurdia trinervis, MAK., in Tokyo Bot. Mag. XVI. p. 171 (1902); MATSUM., Ind. Pl. Jap. II. 2. p. 498 (1912); MORI, Enum. Pl. Cor. p. 289 (1922)
Crawfurdia fasciculata, WALL.; MATSUM. et HAY., Enum. Pl. Formos. p. 243 (1906)

Nom. Jap. *Turu-rindó*

Leg. Ipse, Aug. 1931.

Distr. Kuriles, Yezo, Honsyú, Sikoku, Kyúsyú, Taiwan, Korea.

Note. The species is found in the lauri-aciculisilvae.

var. *tenuis*, MASAMUNE, in Journ. Trop. Agr. IV. p. 76 (1932)

Nom. Jap. *Yakusima-turu-rindó*

Leg. Ipse, Aug. 31, 1931.

Distr. Endemica.

Note. The variety is found in the Pseudosasa Owatarii Association from about 1700 m up to 1900 m.

Kudoa, MASAMUNE, in Journ. Trop. Agr. II. p.

29, 1930.

Kudoa yakushimensis, MAK. MASAMUNE, in Journ. Trop. Agr. II. p. 29 (1930)

Syn. *Gentiana yakushimensis*, MAK., in Tokyo Bot. Mag. XXIII. p. 252 (1909); MAK. et NEM., Fl. Jap. ed. 2. p. 949 (1931)

Nom. Jap. *Yakusima-rindó*

Leg. Ipse, Aug. 31, 1926.

Distr. Endemica.

Note. This species is a lithophyte and is found in crevices of granite found in the Pseudosasa Owatarii Association, from 1800 m up to 1900 m.

Gentiana, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 227 (1753); ENDL., Gen. Pl. n. 3528 (1836-40); GRISEB., in DC. Prodr. IX. p. 86 (1845); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 815 (1876) p.p.; KUSNEZOW, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 80 (1895) p.p.; LEMÉE, Dict. Gen. Pl. Phan. III. p. 227 (1931) p.p.

Syn. *Crossopetalon*, ADANS., Fam. II. p. 224 (1763)

Gentiana sino-ornata, BALFOUR. f. form. *saxatilis*, NAK., in Tokyo Bot. Mag. XLVI. p. 608 (1932)

Syn. *Gentiana scabra*, var. *Buergeri*, subv. *saxatilis*, HONDA, in Tokyo Bot. Mag. XLII. p. 508. (1928)

Gentiana saxatilis, HONDA, in Tokyo Bot. Mag. XLIII. p. 191 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 948 (1931)

Nom. Jap. *Kumarindó*

Leg. OKUMURA! Inter Miyanoura et Miyanouradake, April. 11, 1906.

Distr. Kyúsyú.

Note. I have not collected any specimen of this plant from this island but Dr. KUDO told me that Mr. OKUMURA had once collected this plant in the island. It is not yet found in lands further south than this island belonging to Japan.

Gentiana squarrosa, LEDEB., in Mém. Acad. St. Petersb. V. p. 527 (1812); FR. et SAV., Enum. Pl. Jap. I. p. 323 (1875), et II. p. 450 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 135 (1890); KOM., Fl. Mansh. III. p. 258 (1907); NAK., Fl. Kor. II. p. 98 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 502 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 949 (1931)

Nom. Jap. Koke-rindô

Leg. Ipse, Mart. 22. 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria.

Note. The species is found as undergrowth in the laurisilvae at low altitudes.

Gentiana yakumontana, MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); Herbae annuae glabriusculae, ca. 8 mm altae. Folia radicalia 3-5 rosulata sessilia ovata, ovato-elliptica vel ovato-rotundata glabra ca. 1.5 cm longa, 1 cm lata, apice rotundata ad summo vix mucronata, basi attenuata, caulina opposita sessilia, minora quam radicalia, elliptica, vel elliptico-ovata. Flores plerumque terminales erecti pedunculati, pedunculis 1-3 mm longis, bracteis oppositis lanceolatis 3 mm longis. Calyx late campanulatus membranaceus 4-5 mm longus 5 partitus, segmentis lineari-deltoides ca. 1 mm longis. Corolla pupurea tuboso-campanulata ca. 1 cm longa, tubo superne dilatato, limbo 5-lobato, lobis longe deltoideis 2 mm longis 1 mm latis acutis contortis. Stamina 5, ad basin tubi affixa filamentis filiformibus 4-6 mm longis, antheris oblongis ca. 1.5 mm longis. Ovarium sessile, oblongum, stigmatibus sessilibus, 2-fido, capituliformi.

Nom. Jap. Yakusima-koke-rindô

Leg. Ipse, Yaegadake, ca. 1800 m alt.

Distr. Endemica.

Note. The new species is found only in this island, and grows on bare ground scattered in the Pseudosasa Owatarii Association.

Gentiana Zollingeri, FAWCETT, in Journ. Bot. XXI. p. 183 (1883); FORB. et HEMSL., Ind. Fl. Sin. II. p. 138 (1890); KOM., Fl. Mansh. III. p. 260 (1907); NAK., Fl. Kor. II. p. 97 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 502 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 950 (1931)

Syn. Gentiana Thunbergii, (non GRISEB.) MAXIM., in Mém. Biolog. IX. p. 397 (1874)

Nom. Jap. Hude-rindô

Leg. Y. KUDO! Aug. 1907.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria.

Note. The species is found as undergrowth in the lauri-aciculililvae about 700 m above the sea level.

Swertia, (*Swertia*) LINN., Sp. Pl. ed. 1. p. 226 (1753); ENDL., Gen. Pl. n. 3530 (1836-40); GRISEB., in DC. Prodr. IX. p. 131 (1845); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 816 (1876); GILG., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 87 (1895)

Syn. Frasera, WALTER, Fl. Coarol. p. 87 (1788)

Agathotes, D. DON, in Philos. Mag. VIII. p. 77 (1836)

Anagallidium, GRISEB., Gen. et Sp. Gent. p. 311 (1839)

Swertia chinensis, FRANCH., in Bull. Soc. Fr. XXXII. p. 26 (1885); FORB. et HEMSL., Ind. Fl. Sin. II. p. 139 (1890); NAK., Fl. Kor. II. p. 100 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 503 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 951 (1931)

Syn. *Swertia rotata*, (non LINN.) THUNB., Fl. Jap. p. 115 (1784)

Ophelia chinensis, BUNGE, in DC. Prodr. IX. p. 126 (1845); FR., Pl. David. I. p. 212 (1884)

Pleurogyne rotata, (non GRISEB.) SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 159 (1846); FR. et SAV., Enum. Pl. Jap. I. p. 324 (1875)

Swertia diluta, BENTH. et HOOK. f., Gen. Pl. II. p. 817 (1876); HANCE, in Journ. Bot. XX. p. 37 (1882)

Nom. Jap. *Murasaki-senburi*

Leg. Ipse, Aikodake, Jul. 10, 1928.

Distr. Honsyû, Kyûsyû, Korea.

Note. Grows in somewhat open sunny spots; has its southern limit in this island.

Swertia Tashiroi, MAK., in Tokyo Bot. Mag. XVII. p. 53 (1903), et in id. XVIII. p. 142 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 504 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 952 (1931)

Nom. Jap. *Hekka-rindô*

Leg. Ipse, Kosugidani, Sept. 1928.

Distr. Kyûsyû, Nakanosima, Amami-Ôsima, Okinawa.

Note. The species is found as undergrowth in the lauri-aciculisilvae, or in open lands.

| Names of Plants | Regions | | | | | | | | | |
|---|---------------------------------|---------|-------------|---------|------------|--------------|--------|--------|--------|---|
| | Philippines Bonins Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea Yezo & Southern Kuriles Saghalien Northern Kuriles & Kamtchatka Manchuria, Amur & Ussuri China |
| <i>Erythraea spicata</i> , PERS. | + | + | + | + | | | | | | |
| <i>Crawfurdia japonica</i> , SIEB. et ZUCC. | | + | | | | | + | + | + | + |
| <i>C. j.</i> var. <i>tenuis</i> , MASAMUNE | | | | | | | | | | |
| <i>Kudoa yakushimensis</i> , MASAMUNE | | | | | | | | | | |
| <i>Gentiana sino-ornata</i> , BALFOUR. f. f. <i>saxatilis</i> , NAK. | | | | | | + | | | | |
| <i>Gentiana squarrosa</i> , LEDEB. | | | | | + | + | + | + | + | + |
| <i>Gentiana yakumontana</i> , MASAMUNE | | | | | | | | | | |
| <i>Gentiana Zollingeri</i> , FAWCETT | | | | | + | + | + | + | + | + |
| <i>Swertia chinensis</i> , FR. | | | | | | + | + | + | + | + |

Note. The species is found in the laurisilvae or in the littoral forests. .

Trachelospermum, LEM., Jardin Fleur., I. t. 61 (1851); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 720 (1876); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 173 (1895)

Syn. *Rhychospermum*, LINDL., in Journ. Hort. Soc. I. p. 74 (1846)

Triadenia, MIQ., Fl. Ind. Bat. II. p. 458 (1856)

Parechites, MIQ., in Versl. in Med. Akad. Amsterdam VI. p. 193 (1857)

Trachelospermum asiaticum, NAK. var. *intermedium*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. p. 419 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 959 (1931)

Syn. *Nerium divaricatum*, (non LINN.) THUNB., Fl. Jap. p. 110 (1784)

Malouetia asiatica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 163 (1846) partim.

Parechites Thunbergii, A. GRAY, in Mem. Am. Acad. Art. Sien. ser. 2. VI. p. 403 (1859) p.p.

Trachelospermum jasminoides, (non LINN.) FR. et SAV., Enum. Pl. Jap. II. p. 438 (1879); NAK., Fl. Kor. II. p. 91 (1911)

Trachelospermum divaricatum, K. SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 173 (1895) exl. syn. et fig. in p. 167 (1895); MATSUM., Ind. Pl. Jap. II. 2. p. 507 (1912)

Nom. Jap. *Teika-kazura*

Leg. A. KIMURA! Aug. 10, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. The species is often found in waste lands or on the edges of forest of laurisilvae.

var. *pubescens*, NAK., Fl. Sylv. Kor. XIV. p. 13 (1923), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 420 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 112 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 959 (1931)

Syn. *Trachelospermum jasminoides*, var. *pubescens*, MAK., in Tokyo Bot. Mag. XXVI. p. 122 (1912)

Nom. Jap. *Keteikakazura*

Leg. Ipse, Jul. 4, 1924.

Distr. Honsyû, Kyûsyû, Korea.

Note. The variety is found under the same conditions of the environment as the previous one. It has its southern limit in this island.

var. *oblanceolata*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 423 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 113 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 959 (1931)

Nom. Jap. *Nagaba-teikakazura*

Leg. Ipse, Jul. 21, 1927.

Distr. Kyûsyû.

Note. This climbing tree is found in the laurisilvae or in the lauri-aciculisilvae. The variety has its southern limit in this island.

Trachelospermum majus, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. I. p. 308 (1922), et ed. 2. p. 424 f. 203 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 960 (1931)

Nom. Jap. *Tyôzi-kazura*

Leg. Ipse, Sitogo, Aug. 19, 1928.

Distr. Honsyû, Kyûsyû.

Note. The species is not yet found in lands further south than this island.

| Names of Plants | Regions | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|-----------------------|------------|--------------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Anami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | China |
| <i>Anodendron affine</i> , NAK. | | + | + | + | | | + | + | | + |
| <i>Trachelospermum asiaticum</i> , NAK. var. intermedium, NAK. | | + | + | + | | | + | + | | |
| <i>T. a. var. pubescens</i> , NAK. | | | | | | | + | | | |
| <i>T. a. var. oblanceolata</i> , NAK. | | | | | | | + | | | |
| <i>Trachelospermum majus</i> , NAK. | | | | | | | + | + | | |
| Total | 5 | 2 | 2 | 2 | 2 | 2 | 5 | 2 | 4 | 1 |
| Percentage | | 40 | 40 | 40 | 40 | 40 | 100 | 40 | 80 | 20 |
| (Southern elements 2) | | | | | | (Northern elements 5) | | | | |

It will appear from the above table that the island is closely related to the northern floral region in respect of this family.

Asclepiadaceae

Asclepiadaceae, LINDL., Veg. Kingd. p. 623 (1847)

- Cynanchum*, [LINN., Gen. Pl. ed. 1. p. 63 (1737)]
 et Sp. Pl. ed. 1. p. 212 (1753); ENDL., Gen. Pl. n. 3461 (1836-40); DECNE., in DC.
 Prodr. VIII. p. 547 (1844); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 762
 (1876); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 250 (1895); LEMÉE,
 Dict. Gen. Pl. Phan. II. p. 457 (1930)
Syn. *Vincetoxicum*, [RUPP., Fl. Jen. ed. 3. p. 25 (1745)] MOENCH, Meth. p. 717 (1794)
Psanchum, NECK., Elem. I. p. 254 (1790)
Lyonicia, ELL., Sketch. Bot. South-Carol. I. p. 316 (1817)

Cynanchum japonicum, HEMSLE., in Journ. Linn. Soc. XXVI. p. 107 (1899); PALIB.,
 Consp. Fl. Kor. II. p. 12 (1900); NAK., Fl. Kor. II. p. 95 (1911); MATSUM., Ind.

Pl. Jap. II. 2. p. 509 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 113 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 963 (1931)

Syn. *Vincetoxicum japonicum*, MORR. et DEC., in Bull. Acad. Brux. III. p. 172 (1836); DECNE., in DC. Prodr. VIII. p. 524 (1844); FR. et SAV., Enum. Pl. Jap. II. p. 319 (1876); MAXIM., in Mél. Biolog. IX. p. 783 (1876)

Tylophora floribunda, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 128 (1866)

Nom. Jap. *Iyokazura*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. The species is found in waste places or by the roadside near the sea level.

Tylophora, R. BR., in Mem. Werner, Soc. I. p. 28 (1809); ENDL., Gen. Pl. n. 3500 (1836-40); DECNE., in DC. Prodr. VIII. p. 606 (1844); BENTH., in BENTH. et HOOK. f., Gen. Pl. II. p. 770 (1876); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 286 (1895)

Syn. *Hybanthera*, ENDL., Prodr. Norf. p. 59 (1833)

Tylophora Tanakae, MAXIM., ex FR. et SAV. Enum. Pl. Jap. I. p. 321 (1875), et in Mél. Biolog. IX. p. 815 (1876); MATSUM., Ind. Pl. Jap. II. 2. p. 515 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 113 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 970 (1931)

Syn. *Vincetoxicum Tanakae*, FR. et SAV., Enum. Pl. Jap. II. p. 444 (1876)

Nom. Jap. *Turumôrinka*

Leg. Ipse, Kurio, Jun. 26, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. This climbing plant is found in waste places at low altitudes. It is restricted to Kyûsyû and the Ryûkyû region.

Stephanotis, THOU., Gen. Nov. Madagascar p. 11 1806; ENDL., Gen. Pl. n. 3510 (1836-40); DECNE., in DC. Prodr. VIII. p. 620 (1844); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 773 (1876); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 287 (1895)

Syn. *Isaura*, COMM., ex POIR. Encycl. Suppl. III. p. 185 (1813)

Stephanotis japonica, MAK., in Tokyo Bot. Mag. VI. p. (53) (1892); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 438 t. 210 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 113 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 968 (1931)

Syn. *Stephanotis chinensis*, (non CHAMP.) MAK., in Tokyo Bot. Mag. XVIII. p. 71 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 514 (1912)

Nom. Jap. *Sitakisô*

Leg. Ipse, Kosugidani, Jul. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima.

Note. The plant is found from the sea level up to 600 m above in the laurisilvae and very often in clearings. The species has its southern limit in this island.

Hoya, R. BR., in Mem. Werner, Soc. I. p. 26 (1809); ENDL., Gen. Pl. n. 3501 (1836-40); DECNE., in DC. Prodr. VIII. p. 634 (1844); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 776 (1876); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. ii. p. 289 (1895); LEMÉE, Dict. Gen. Pl. Phan. III. p. 658 (1931)

Syn. *Sperlingia*, VAHL., in Skrivt. Nat. Selsk. Kjöbenth. VI. p. 113 (1810)

| Names of Plants | Regions | | | | | |
|--|---------------------------------|---------|--------------|------------|------------------------|---|
| | Philippines Bonins Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūtsū Prop. Kyūtsū | Sikoku Honsyū Korea Yezo & Southern Kuriles Saghalien Northern Kuriles & Kamichatka Manchuria, Amur & Ussuri China |
| Cynanchum japonicum, HEMSL., | | + | + | + | + | + |
| Tylophora Tanakae, MAXIM. | | + | + | + | + | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|----|----|----|-----|-----|----|----|----|-----------------------|--|--|--|--|--|--|--|--|----|
| Stephanotis japonica, MAK. | | | | | + | + | + | + | | | | | | | | | | | |
| Hoya carnososa, R. BR. | | + | + | + | + | + | | | | | | | | | | | | | + |
| Marsdenia tomentosa, MORR. et DE CAISN. | | | + | + | + | + | + | + | + | | | | | | | | | | |
| Total | 5 | 1 | 3 | 4 | 5 | 5 | 3 | 3 | 1 | | | | | | | | | | 2 |
| Percentage | | 20 | 60 | 80 | 100 | 100 | 60 | 60 | 20 | | | | | | | | | | 40 |
| (Southern elements 4) | | | | | | | | | | (Northern elements 5) | | | | | | | | | |

Nom. Jap. Kizyôran

Leg. Ipse, Onoaida, Sept. 5, 1926.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species flourishes as a liane in the laurilsilvae from the sea level up to 500 m. It has its southern limit in Okinawa.

From the above table, it will be seen that most of the species of this family indigenous to the island have their southern limit in Okinawa, and are not found in Formosa. From this point of view the sea that divides Okinawa and Formosa has some significance as dividing the floral regions of *Asclepiadaceae*.

Convolvulaceae

Convolvulaceae, VENT., Tabl. II. p. 394 (1799 ; CHOISY, in DC. Prodr. IX. p. 325 (1845)

Dichondra, FORST., Char. Gen. p. 39, t. 20 1776 ; ENDL., Gen. Pl. n. 3788 1836-40¹ ; CHOISY, in DC. Prodr. IX. p. 451 (1845 ; BENTH. et HOOK. f., Gen. Pl. II. p. 879 (1876) ; PETER, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 13 (1891) ; LEMÉE, Dict. Gen. Pl. Phan. II. p. 586 (1930)

Syn. *Demidofia*, J. F. GMEL., Syst. II. p. 458 (1791)

Dichondra repens, FORST., Char. Gen. p. 39, t. 20 1776¹ ; CHOISY, in DC. Prodr. IX. p. 451 (1845) ; BENTH., Fl. Hongk. p. 240 (1861¹) ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 189 (1867) ; FR. et SAV., Enum. Pl. Jap. I. p. 332 (1875¹) ; FORB. et HEMSL., Ind. Fl. Sin. II. p. 167 (1890 ; DIELS, Fl. Centr. Chin. p. 544 1900 ; MATSUM. et HAY., Enum. Pl. Formos p. 268 (1906) ; MATSUM., Ind. Pl. Jap. II. 2. p. 517 (1912) ; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 181 (1912) ; GAGNEPAIN, in LECOMTE Fl. Ind. Chin. IV. 3. p. 310 (1915) ; MORI, Enum. Pl. Cor. p. 295 (1922) ; MERR., Enum. Philipp. Pl. III. p. 357 (1923) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 114 (1929)

Syn. *Siphthorbia evolvulacea*, LINN. f., Supp. Syst. Veg. p. 288 (1781)

Dichondra evolvulacea, BRITT., in Mem. Torr. Bot. Club. V. p. 268 (1894¹) ; MAK. et NEM., Fl. Jap. ed. 2. p. 974 (1931)

Nom. Jap. *Auigoke*

Leg. Ipse, Yudomari, April. 2, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. The species is found along the roadside, in cultivated or waste lands near dwellings. It is widely distributed in tropical and subtropical regions.

Erycibe, ROXB., Pl. Coromandel. II. p. 31, t. 159

(1798); ENDL., Gen. Pl. n. 3815 (1836-40); CHOISY, in DC. Prodr. IX. p. 464 (1845); BENTH. et HOOK. f., Gen. Pl. II. p. 868 (1876); PETER, in ENGL. u. PRANT.

Nat. Pfl.-fam. IV. iii. a. p. 36 (1891); LEMÉE, Dict. Gen. Pl. Phan. III. p. 5 (1931)

Syn. *Catonia*, VAHL., in Skrivt. Nat. Selsk. Kjöben. VI. p. 98 (1810)

Erimatalia, ROEM. et SCHULT. f., Syst. V. p. 27 (1819)

Erycibe acutifolia, HAY., Ic. Pl. Formos. IX. p. 76 (1920); MASAMUNE, Prel. Rep. Veg.

Yak. p. 114 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 974 (1931)

Nom. Jap. *Horuto-kazura*

Leg. Ipse, April. 5, 1927.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan.

Note. This climbing tree is found in the laurisilvae from the sea level up to about 500 m. It occurs very rarely in the southern part of Kyûsyû, (Penn. Sata. in Prov. Ôsumi) the most northern limit of habitat of this species. I have grave doubt that it may be the same as *E. Henryi*.

Calystegia, R. BR., Prodr. p. 482 (1810); ENDL.,

Gen. Pl. n. 3801 (1836-40); CHOISY, in DC. Prodr. IX. p. 433 (1845); BENTH. et HOOK. f., Gen. Pl. II. p. 874 (1876); PETER, in ENGL. u. PRANT. Nat. Pfl.-fam.

IV. iii. a. p. 36 (1891); LEMÉE, Dict. Gen. Pl. Phan. I. p. 791 (1929)

Syn. *Convolvulus*, LINN., Sp. Pl. ed. 1. p. 153 (1753) partim.

Calystegia soldanella, R. BR., Prodr. Pl. Nov. Holl. p. 483 (1810); CHOISY, in DC.

Prodr. IX. p. 433 (1845); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 94 (1865);

FR. et SAV., Enum. Pl. Jap. I. p. 331 (1875); FORB. et HEMSL., Ind. Fl. Sin. II.

p. 165 (1890); PALIB., Consp. Fl. Kor. II. p. 18 (1900); MATSUM. et HAY., Enum.

Pl. Formos. p. 267 (1906); KOM., Fl. Man. III. p. 304 (1907); NAK., Fl. Kor.

II. p. 109 (1911); MATSUM., Ind. Pl. Jap. II. p. 516 (1912); LOESEN., Pfl.-welt.

Kiautsch. Geb. p. 171 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 114 (1929);

MAK. et NEM., Fl. Jap. ed. 2. p. 972 (1931)

Syn. *Convolvulus Soldanella*, LINN., Sp. Pl. ed. 1. p. 159 (1753); BENTH., Fl. Austr. IV. p. 431 (1869)

Nom. Jap. *Hama-hirugao*

Leg. Ipse, Miyanoura.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, Manchuria, China.

Note. This littoral plant is found on sandy beaches, and it is widely distributed in the temperate zones of both hemispheres.

Ipomoea, [LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed.

1. p. 159 (1753); ENDL., Gen. Pl. n. 3803 c (1836-40); CHOISY, in DC. Prodr. IX. p. 348 (1845); BENTH. et HOOK. f., Gen. Pl. II. p. 870 (1876); PETER, in ENGL. u. PRANT.

| Names of Plants | Regions | | | | | | | | | | | | | | |
|---------------------------------------|---------------------------------|-----------|--------------|---------|-----|-------------|--------------|--------|--------|-------|-------------------------|-----------|-------------------------------|-------------------------|-------|
| | Philippines Bonins Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | | Kyūsyū | | | | | | | | | |
| | | | | | | Tanegashima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Usuri | China |
| Dichondra repens, FORST. | + | + | + | + | + | | + | + | + | + | | | | | + |
| Erycibe acutifolia, HAY. | | | + | + | + | | + | | | | | | | | |
| Calystegia soldanella, R. BR. | | | + | + | + | + | + | + | + | + | + | | | + | + |
| Ipomoea indica, MERR. | + | + | + | + | + | + | + | | | | | | | + | |
| Ipomoea pes-caprae, ROTH. | + | + | + | + | + | + | + | + | + | | | | | + | + |
| Total | 5 | 3 1 5 | 5 5 | 5 | 4 | 5 | 3 3 | 2 1 | | | | | | 1 4 | |
| Percentage | | 60 20 100 | 100 100 | 80 | 100 | 60 60 | 40 20 | | | | | | | 20 80 | |

(Southern elements 5)
(Northern elements 5)

370 (1845); MIQ., Fl. Ind. Bat. II. p. 611 (1856); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. IV. p. 207 (1883); HATTORI, Pfl.-Geogr. Bonn. p. 34 (1908); RIDLEY, Fl. Malay II. p. 460 (1923); MERR., Enum. Hainan Pl. p. 154 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 114 (1929); NAK., in Bull. Biogeogr. I. p. 262 (1930)

Syn. *Convolvulus pes-caprae*, LINN., Sp. Pl. p. 159 (1753)

Ipomoea biloba, FORSK., Fl. Aeg. Arab. p. 44 (1775); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. IV. p. 212 (1883); FORB. et HEMSL., Ind. Fl. Sin. II. p. 157 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 260 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 518 (1912); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. IV. 3. p. 259 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 975 (1931)

Ipomoea maritima, R. BR., Prodr. Fl. Nov. Holl. p. 486 (1810); LINDL., Bot. Reg. t. 319 (1824)

Nom. Jap. *Gunbai-hirugao*

Leg. Ipse, Aug. 11, 1928.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Philippines.

Note. The psammophyte covers the sandy beach with its prostrated plant body. It is distributed all over the tropics and subtropics.

The species of *Convolvulaceae* indigenous to Yakusima are all found in its neighbouring regions. So I cannot decide to which region the island is most closely related so far as the distribution of the plants of this family is concerned.

Borraginaceae

Borraginaceae, LINDL., Nat. Syst. ed. 2. p. 274 (1836); GÜRKE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 71 (1893)

Ehretia, LINN., Syst. ed. 10. p. 936 (1759); ENDL., Gen. Pl. n. 3743 (1836-40); DC., Prodr. IX. p. 502 (1845); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 840 (1876); GÜRKE, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 87 (1893); LEMÉE, Dict. Gen. Pl. Phan. II. p. 805 (1930)

Syn. *Erhetia*, HILL., Hort. Kew. ed. 2. p. 440 (1769)

Eretia, STOKES, Bot. Mat. Med. I. p. 421 (1812)

Ehretia thyrsoiflora, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. I. p. 327 (1922), et ed. 2. I. p. 442 f. 211 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 114 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 987 (1931)

Syn. *Ehretia serrata*, ROXB. β *obovata*, LINDL., in Bot. Reg. XIII. t. 1097 (1827)

Cordia thyrsoiflora, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 150 (1846)

Ehretia serrata, (non ROXB.) FR. et SAV., Enum. Pl. Jap. I. p. 333 (1875)

Ehretia acuminata, (non R. BR.) MATSUM., in Tokyo Bot. Mag. XII. p. 83 (1898); FORB. et HEMSL., Ind. Fl. Sin. II. p. 143 (1890) p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 524 (1912); DIELS, Fl. Cent. Chin. p. 545 (1900); CHUN., Cat. Tree. & Shrub. Chin. p. 225 (1924) p.p.

Nom. Jap. *Tsyanoki*

Leg. Ipse, Jun. 28, 1928.

- Eritrichium japonicum*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 96 (1865)
Nom. Jap. *Tabirako*
Leg. Ipse, Ambô, April. 1, 1927.
Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, Manchuria.
Note. The species is found by the roadside, and in waste lands at low altitudes.

As the above table shows, the flora of the island has no special relation either to the southern or to the northern floral regions in respect of this family.

Verbenaceae

- Verbenaceae**, JUSS., in Ann. Mus. Paris. V. p. 254 (1804), et VII. p. 63 (1806); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. a. iii. p. 132 (1894)
- Lippia**, [HOUST., ex LINN. Gen. Pl. ed. 1. p. 347 (1737)] et Sp. Pl. ed. 1. p. 633 (1753); ENDL., Gen. Pl. n. 3684 (1836-40); SCHAUER, in DC. Prodr. XI. p. 572 (1867); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1142 (1876); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 151 (1894); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 118 (1932)
- Syn.** *Phyla*, LOUR., Fl. Cochinch. p. 66 (1790)
Cryptocalyx, BENTH., in Ann. Nat. Hist. II. p. 446 (1839)
- Lippia nodiflora**, RICH., in MICHX. Fl. Bor. Am. II. p. 15 (1803); WIGHT, Ic. Pl. Ind. Or. t. 1464 (1850); MIQ., Fl. Ind. Bat. II. p. 905 (1858); SCHAUER, in DC. Prodr. XI. p. 585 (1867); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. IV. p. 563 (1885); MAXIM., in Mél. Biol. XII. p. 502 (1886); FORB. et HEMSL., Ind. Fl. Sin. II. p. 251 (1890); MATSUM., in Tokyo Bot. Mag. XIII. p. 113 (1899), et Ind. Pl. Jap. II. 2. p. 533 (1912); DIELS, Fl. Centr. Chin. p. 547 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 297 (1906); MERR., Enum. Philipp. Pl. III. p. 381 (1923), et Enum. Hainan Pl. p. 157 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 115 (1929)
- Syn.** *Verbena nodiflora*, LINN., Sp. Pl. p. 20 (1753)
Phyla chinensis, LOUR., Fl. Cochinch. p. 66 (1790); DC., Prodr. XVII. p. 296 (1873)
Lippia nodiflora, var. *sarmentosa*, SCHAU., in DC. Prodr. XI. p. 585 (1847); MAK. et NEM., Fl. Jap. ed. 2. p. 1000 (1931)
- Nom. Jap.** *Iwadaresô*
Leg. Ipse, Ambô, Aug. 12, 1928.
Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines.
Note. The species is found as a psammophyte on sandy beaches. It is found in tropical and subtropical regions.
- Callicarpa**, [LINN., in Act. Soc. Upsal. p. 80 (1741)] et Sp. Pl. ed. 1. p. 111 (1753); ENDL., Gen. Pl. n. 3712 (1836-40); SCHAUER, in DC. Prodr. XI. p. 640 (1847); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1150 (1876); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 165 (1894); LEMÉE, Dict. Gen. Pl. Phan. I. p. 757 (1929)

- Syn.** *Tomex*, [LINN., Nov. Pl. Gen. p. 5 (1747), et Amoen. Acad. I. p. 389 (1749)] et Sp. Pl. ed. 1. p. 118 (1753)
Illa, ADANS., Fam. II. p. 446 (1763)
Porphyra, LOUR., Fl. Coch. p. 69 (1790)

Callicarpa japonica, THUNB. var. *luxurians*, REHDER, in SARGENT, Pl. Wils. III. 2. p. 369 (1916); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 454 f. 215 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 114 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 994 (1931)

Syn. *Callicarpa japonica*, (non THUNB.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 98 (1865) p.p.

Callicarpa japonica, MATSUM., in Tokyo Bot. Mag. XIII. p. 115 (1899), et Ind. Pl. Jap. II. 2. p. 529 (1912) p.p.

Callicarpa australis, KOIDZ., in Tokyo Bot. Mag. XXX. p. 326 (1916)

Nom. Jap. *Ômurasaki-sikibu*

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. The species is distributed in the littoral regions of southern Japan, and in the island it occurs in waste lands and on the edges of forests.

Callicarpa mollis, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 155 (1846); GRAY, Narr. Perr. Exped. p. 316 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 99 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 359 (1875); NAK., Fl. Kor. II. p. 134 (1911), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 456, f. 217 (1927); MATSUM., Ind. Pl. Jap. II. 2. p. 529 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 114 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 994 (1931)

Syn. *Callicarpa Zollingeriana*, SCHAUER, in DC. Prodr. XI. p. 640 (1847)

Nom. Jap. *Yabumurasaki*

Leg. Ipse, Kosugidani, Aug. 31, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea.

Note. The species grows in the lauri-aciculisilvae and sometimes in clearings or along forest edges.

var. *microphylla*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 156 (1846); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 458 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 115 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 995 (1931)

Nom. Jap. *Nagaba-yabumurasaki*

Leg. Ipse, Kosugidani, Jun. 7, 1928.

Distr. Honsyû, Kyûsyû.

Note. The variety is found under the same condition as the type species and it is restricted to southern Honsyû, and Kyûsyû.

var. *ramosissima*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 458 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 115 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 995 (1931)

Nom. Jap. *Kobano-yabu-murasaki*

Leg. Ipse, Kosugidani

Distr. Honsyû, Kyûsyû.

Note. The variety is found under the same condition as the previous variety.

Callicarpa yakusimensis, KOIDZ., in Tokyo Bot. Mag. XXVIII. p. 151 (1914); NAK., in

NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 463, f. 220 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 115 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 996 (1931)

Nom. Jap. *Yakusima-komurasaki*

Leg. Ipse, Ambô, Aug. 30, 1931.

Distr. Endemica.

Note. The species is found in sunny spots like clearings or forest edges from the sea level up to almost 800 m.

Premna, LINN., Mant. II. p. 154 (1771); ENDL.,

Gen. Pl. n. 3701 (1836-40); SCHAUER, in DC. Prodr. XI. p. 630 (1847); BENTH.,

in BENTH. et HOOK. f. Gen. Pl. II. p. 1152 (1876); BRIQ., in ENGL. u. PRANT.

Nat. Pfl.-fam. IV. iii. a. p. 170 (1894)

Syn. *Cornutioides*, LINN., F. Zeyl. p. 195 (1747)

Scrophularioides, FORST. f., Prodr. p. 91 (1786)

Premna japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 97 (1865); FR. et SAV.,

Enum. Pl. Jap. I. p. 358 (1875); SHIRASAWA, Ic. Tr. Jap. II. p. 216, Pl. 70 ff.

1-10 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 471 f. 223,

(1927); SASAKI, List Pl. Formos. p. 352 (1928); MASAMUNE, Prel. Rep. Veg. Yak.

p. 115 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1000 (1931)

Syn. *Premna microphylla*, (non TURC.) MAXIM., in Bull. Acad. St. Petersb. XXXI.

p. 79 (1886) p.p.; FORB. et HEMSL., Ind. Fl. Sin. II. p. 256 (1890); MATSUM.,

Ind. Pl. Jap. II. 2. p. 533 (1912)

Nom. Jap. *Hamakusagi*

Leg. A. KIMURA! Aug. 6, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, China.

Note. The species is common in southern Japan, and in the island it is found in the laurisilvae or in the littoral forests.

Vitex, [TOURN., ex LINN. Syst. ed. 1 (1735)] et

Sp. Pl. ed. 1. p. 638 (1753); ENDL., Gen. Pl. n. 3700 (1836-40); SCHAUER, in DC.

Prodr. XI. p. 682 (1847); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1154

(1876); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 170 (1894)

Syn. *Mailelou*, ADANS., Fam. II. p. 200 (1763)

Tripinna, LOUR., Fl. Cochinch. p. 391 (1790)

Vitex trifolia, LINN. var. *simplicifolia*, CHAM., in Linnaea VIII. p. 107 (1832)

Syn. *Vitex rotundifolia*, LINN. f., Supp. Pl. Syst. Veg. p. 294 (1781); MIURA, List Pl.

Manch. & Mong. p. 330 (1925); NAK., in NAK. et KOIDZ. Tree. & Shrub.

Jap. ed. 2. p. 474, f. 224 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 1002 (1931)

Vitex ovata, THUNB., Fl. Jap. p. 257 (1784); WILL., Sp. Pl. III. p. 390 (1800);

SPRENG., Syst. Veg. II. p. 766 (1825); HOOK. et ARNOT., Bot. Capt. Beech.

Voy. pp. 206, 268, t. 17 (1830); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p.

152 (1846)

Vitex trifolia, LINN. var. *unifoliolata*, SCHAUER, in DC. Prodr. XI. p. 683 (1847)

Vitex trifolia, LINN. var. *obovata*, BENTH., Fl. Austr. V. p. 67 (1876)

Vitex trifolia, (non LINN.) HEMSL., in Journ. Linn. Soc. XXVI. p. 258 (1888)

p.p.

Vitex Agnus-castus, var. *ovata*, O. KUNTZE, Rev. Gen. Pl. II. p. 511 (1891)

Vitex trifolia, LINN. var. *ovata*, MAK., in Tokyo Bot. Mag. XVII. p. 92 (1903);

NAK., Fl. Kor. II. p. 135 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 534 (1912);

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|-----------------------|--------------|--------|--------|--------|-------|-------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles |
| | | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | | Northern Kuriles & Kamtchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |
| <i>C. m. var. microphylla</i> , SIEB. et ZUCC. | | | | | | | + | + | | | | |
| <i>C. m. var. ramosissima</i> , NAK. | | | | | | | + | + | | | | |
| <i>Callicarpa yakusimensis</i> , KOIDZ. | | | | | | | | | | | | |
| <i>Premna japonica</i> , MIQ. | | | + | | + | + | + | + | + | + | | + |
| <i>Vitex trifolia</i> , LINN. var. <i>simplicifolia</i> , CHAM. | + | + | + | + | | | + | + | + | + | | + |
| <i>Clerodendron yakusimensis</i> , NAK. | | | | | + | | | | | | | |
| Total | 9 | 2 | 1 | 4 | 4 | 4 | 4 | 7 | 5 | 7 | 3 | 1 |
| Percentage | 22 | 11 | 44 | 44 | 44 | 44 | 78 | 56 | 78 | 33 | | 11 |
| Southern elements 6 | | | | | | (Northern elements 7) | | | | | | |

Concerning the distribution of the plants of *Verbenaceae*, the flora of Yakusima shows some affinity with the northern districts beyond the island.

Laminaceae*

Laminaceae, LINDL., Nat. Syst. ed. 2. p. 275 (1838)

Syn. Labiatae, B. JUSS., in Hort. Trianon (1759); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1160 (1876); KUDO, Lab. Sino-Jap. Prodr. p. 44 (1929)

Perillula, MAXIM., in Mél. Biolog. IX. p. 440 (1874), et in Bull. Acad. Imp. Petersb. XX. p. 463 (1875); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1182 (1876); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 325 (1894); KUDO, Lab. Sino-Jap. Prodr. p. 70 (1929)

* In the arrangement of the genera of the family, I chiefly followed the system of Dr. KUDO, which was given in his work, "Labiatarum Sino-Japonicarum Prodromus." (1929)

Perillula reptans, MAXIM., in Mél. Biolog. IX. p. 440 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 368 (1874); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 325 f. 98 G. H. (1895); MATSUM., Ind. Pl. Jap. II. 2. p. 546 (1912); KUDO, Lab. Sino-Jap. Prodr. p. 70 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1027 (1931)

Nom. Jap. *Suzu-kôzyu*

Leg. Ipse, Sept. 7, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is found as undergrowth in somewhat wet places in the laurilivae.

Orthodon, BENTH. et OLIVER, in Journ. Linn.

Soc. Bot. IX. p. 167 (1867); KUDO, Lab. Sino-Jap. Prodr. p. 75 (1929)

Syn. *Mosla*, (HAMILT.) ex BENTH., in WALL. Pl. As. Rar. I. p. 66 (1830); MAXIM., in Mél. Biolog. IX. p. 430 (1874); BENTH. et HOOK. f., Gen. Pl. II. p. 1182 (1876); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 326 (1894)

Hedeoma, PERS. Sect. *Mosla*, BENTH., Lab. Gen. et Spec. p. 366 (1832-36), et in DC., Prodr. XII. p. 244 (1848)

Orthodon angustifolium, (MAXIM.) MASAMUNE, comb. nov.

Syn. *Mosla japonica*, MAXIM. var. *angustifolia*, MAK., in Tokyo Bot. Mag. XXI. p. 157 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 544 (1912)

Mosla angustifolia, MAK., in Journ. Jap. Bot. II. p. 24 (1922); NAK., in Tokyo Bot. Mag. XXXV. p. 178 (1921); MAK. et NEM., Fl. Jap. ed. 2. p. 1022 (1931)

Nom. Jap. *Hosôba-yamaziro*

Leg. Ipse, Jul. 27, 1924.

Distr. Honsyû.

Note. Occurs in waste lands at low altitudes.

Orthodon grosseserratum, (MAXIM.) KUDO, in Lab. Sino-Jap. Prodr. p. 79 (1929)

Syn. *Mosla grosseserrata*, MAXIM., in Bull. Acad. Petersb. XX. p. 458 (1865), et in Mél. Biolog. IX. p. 432 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 370 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 280 (1890); KOM., Fl. Mansh. III. p. 391 (1907); NAK., Fl. Kor. II. p. 145 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 544 (1912); KUDO, in Journ. Coll. Sc. Imp. Univ. Tokyo XLIII. 8. p. 48 (1921); MAK. et NEM., Fl. Jap. ed. 2. p. 1022 (1931)

Nom. Jap. *Hime-hakka*

Leg. Ipse, Jul. 21, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, Amur, Usuri.

Note. The species grows by the roadside or in open waste lands, and has its southern limit in this island.

Orthodon punctatum, KUDO, Lab. Sino-Jap. Prodr. p. 80 (1929)

Syn. *Ocimum punctatum*, (non LINN. f.) THUNB., Fl. Jap. p. 249 (1784)

Ocimum punctulatum, J. F. GMELIN, Syst. Veg. p. 917 (1791)

Ocimum scabrum, THUNB., in Trans. Linn. Soc. II. p. 338 (1744); BENTH., Lab. Gen. Sp. p. 17 (1832), et in DC. Prodr. XII. p. 43 (1848)

Mosla punctata, MAXIM., in Bull. Acad. St. Petersb. XX. p. 460 (1865), et in Mél. Biolog. IX. p. 432 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 370 (1875);

FR., Pl. David. I. p. 234 (1884); FORB. et HEMSL., Ind. Fl. Sin. II. p. 281 (1890); PALIB., Consp. Fl. Kor. II. p. 27 (1900); NAK., Fl. Kor. II. p. 145 (1911), et in Tokyo Bot. Mag. XXXV. p. 181 (1921); MATSUM., Ind. Pl. Jap. II. 2. p. 544 (1912); MATSUM. et KUDO, in Tokyo Bot. Mag. XXVI. p. 301 (1912)

Mosla punctulata, NAK., in Tokyo Bot. Mag. XLII. pp. 475, 497 (1928); MASAMUNE, Prel. Rep. Veg. Yak. p. 115 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1023 (1931)

Nom. Jap. *Inu-kôzyu*

Leg. Ipse, ca. Ambô.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, Manchuria, China.

Note. The species is found in open waste lands or by the roadside.

Satureia, [LINN., Gen. n. 707 (1737)] et Sp. Pl. ed. 1. p. 567 (1753); BENTH., Lab. Gen. Sp. p. 351 (1832-36), in DC. Prodr. XII. p. 208 (1848), et in BENTH. et HOOK. f. Gen. Pl. II. p. 1187 (1876); BRIQ., in ENGL. u. PRANT. Nat. Pl.-fam. IV. iii. a. p. 296 (1894); KUDO, Lab. Sino-Jap. Prodr. p. 97 (1929)

Syn. *Calamintha*, (TURN.) LAM., Fl. Fr. II. p. 393 (1778)

Clinopodium, [BURM., ex LINN. Gen. Pl. ed. 1. p. 170 (1737)] et Sp. Pl. ed. 1. p. 587 (1753)

Satureia confinis, (HANCE) KUDO, Lab. Sino-Jap. Prodr. p. 100 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929)

Syn. *Melissa cretica*, (non LINN.) THUNB., Fl. Jap. p. 247 (1784)

Calamintha confinis, HANCE, in Journ. Bot. p. 331 (1868)

Calamintha gracilis, (non BENTH.) FR. et SAV., Enum. Pl. Jap. I. p. 369 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 283 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 311 (1906); DUNN, in Notes. R. B. G. Edingb. No. XXV. II. p. 155 (1913)

Clinopodium gracilis, MATSUM., Ind. Pl. Jap. II. 2. p. 538 (1912)

Satureia gracilis, DIELS, Fl. Cent. Chin. p. 559 (1900); NAK., Fl. Kor. II. p. 149 (1911); MATSUM. et KUDO, in Tokyo Bot. Mag. XXVI. p. 299 (1912)

Nom. Jap. *Tôbana*

Leg. Ipse, Aug. 1, 1928.

Distr. Honsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. The species occurs in wet places as undergrowth in the laurisilvae.

Satureia chinensis, BRIQ., in ENGL. u. PRANT. Nat. Pl.-fam. IV. iii. a. p. 302 (1895); DIELS, Fl. Cent. Chin. p. 559 (1900); NAK., Fl. Kor. II. p. 148 (1911); MERR., Enum. Hainan Pl. p. 162 (1927); KUDO, Lab. Sino-Jap. Prodr. p. 102 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929)

Syn. *Clinopodium vulgare*, (non LINN.) THUNB., Fl. Jap. p. 247 (1784)

Calamintha chinensis, BENTH., in DC. Prodr. XII. p. 233 (1848); MAXIM., Prim. Fl. Amur. p. 217 (1859); FR. et SAV., Enum. Pl. Jap. I. p. 369 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 283 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 310 (1906); KOM, Fl. Mansh. III. p. 374 (1907); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 210 (1912)

Calamintha clinopodium, BENTH. var. *chinensis*, MIQ., in Ann. Mus. Bot. Lugd.

Bat. II. p. 107 1865); DUNN, in Notes R. B. G. Edinb. No. XXVIII. p. 159 (1916)

Calamintha clinopodium, BENTH. var. *urticifolia*, HANCE, in Ann. & Nat. 5 me sér. V. p. 326 (1883)

Clinopodium chinense, O. KUNTZE, Rev. Gen. Pl. II. p. 515 (1891); MAK., in Tokyo Bot. Mag. XX. p. 3 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 533 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1011 (1931)

Nom. Jap. *Kurumabana*

Leg. Ipse, April. 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, Amur, China.

Note. Grows in open places in the laurisilvae or in the lauri-aciculisilvae; rather common in Japan.

Satureia ussuriensis, KUDO, var. **yakusimensis**, MASAMUNE, nom. nov.

Syn. *Satureia yakusimensis*, MASAMUNE, in Journ. Trop. Agr. II. p. 35 1930

Nom. Jap. *Yakusima-tôbana*

Leg. Ipse, Jul. 21, 1927.

Distr. Endemica.

Note. Occurs in the laurisilvae or in the lauri-aciculisilvae from about 400 m up to 700 m.

Isodon, SCHRAD., apud BENTH. Lab. Gen. et Sp.

p. 40 1832; KUDO, Lab. Sino-Jap. Prodr. p. 118 (1929)

Syn. *Plectranthus*, L'HERIT, Sect. *Isoion*, BENTH., Lab. Gen. et Sp. p. 40 1832, et in DC. Prodr. XII. p. 55 (1848)

Plectranthus, L'HERIT. 1. *Isodon*, BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1175 1876

Plectranthus, L'HERIT. Untergatt, *Isoion*, BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 332 (1894)

Isodon glaucocalyx, MAXIM. KUDO, var. **japonicus**, MAXIM. KUDO, Lab. Sino-Jap. Prodr. p. 127 1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 1929

Syn. *Scutellaria japonica*, BURM., Fl. Ind. p. 130 (1769) p.p.

Plectranthus glaucocalyx, MAXIM., in Prim. pp. 212, 475 (1859)

Plectranthus Maximowiczii, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 101 1855

Plectranthus Buergeri, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 101 1865

Plectranthus glaucocalyx, MAXIM. β *japonicus*, MAXIM., in Mém. Biolog. IX. p. 426 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 332 (1875)

Plectranthus japonicus, KOIDZ., in Tokyo Bot. Mag. XLIII. p. 336 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1023 (1931)

Nom. Jap. *Hikiokosi*

Leg. KUDO! ca. Kurio.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea.

Note. I have not myself collected this species, but Dr. KUDO found it in the island.

Isodon inflexus, (THUNB.) KUDO, in Lab. Sino-Jap. Prodr. p. 127 (1929)

Syn. *Ocimum inflexum*, THUNB., Fl. Jap. p. 249 (1784)

Plectranthus inflexus, VAHL., ex BENTH. Lab. Gen. et Sp. p. 711, 1832-36, et in DC. Prodr. XII. p. 61 (1848); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p.

100 (1865); MAXIM., in Mél. Biolog. IX. p. 425 (1874); FORB. et HEMSL., Ind. Fl. Sin. II. p. 272 (1890); MATSUM., Ind. Pl. Jap. II. 2. p. 546 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1028 (1931)

Plectranthus dubius, VAHL., in BENTH. Lab. Gen. et Sp. p. 711 (1832-36), et in DC. Prodr. XII. p. 61 (1848); MAXIM., in Mél. Biolog. IX. p. 429 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 361 (1875)

Nom. Jap. *Yama-hakka*

Leg. Ipse, Jul. 14, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, China.

Note. The species occurs in the laurisilvae or in the lauri-aciculisilvae, and is not yet reported further south than Yakusima.

Salvia, [TOURN., ex LINN. Gen. Pl. ed. 1. n. 39 (1737)] et Sp. Pl. ed. 1. p. 23 (1753); BENTH., Lab. Gen. et Sp. p. 190 (1832-36), in DC. Prodr. XII. p. 262 (1848), et in BENTH. et HOOK. f. Gen. Pl. II. p. 1194 (1876); ENDL., Gen. Pl. n. 3597 (1836-40); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 270 (1894); KUDO, Lab. Sino-Jap. Prodr. p. 156 (1929)

Salvia japonica, THUNB. f. *chinensis*, (BENTH.) KUDO, Lab. Sino-Jap. Prodr. p. 172 (1929)

Syn. *Salvia chinensis*, BENTH., Lab. Gen. et Sp. p. 725 (1832-36), et in DC. Prodr. XII. p. 355 (1848); MAK., in Tokyo Bot. Mag. XXVI. p. 80 (1912); MATSUM. et KUDO, in Tokyo Bot. Mag. XXVI. p. 299 (1912); NAK., in Tokyo Bot. Mag. XXXV. p. 192 (1921); MAK. et NEM., Fl. Jap. ed. 2. p. 1030 (1931)

Salvia japonica, THUNB. α *integrifolia*, FR. et SAV., Enum. Pl. Jap. I. p. 371 (1875), et II. p. 463 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 284 (1890); DIELS, Fl. Cent. Chin. p. 558 (1900)

Salvia japonica, THUNB. α *typica*, MAK. c. *integrifolia*, MAK., in Tokyo Bot. Mag. XI. p. (281) (1897), et XV. p. 108 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 548 (1912)

Salvia chinensis, THUNB. α *typica*, MAK. d. *integrifolia*, MAK., in Tokyo Bot. Mag. XXVI. p. 80 (1912)

Nom. Jap. *Marubano-akino-tamurasô*

Leg. Y. KUDO!

Distr. Honsyû, Kyûsyû, China.

Note. I have not found this species but I was informed by Dr. KUDO that he had collected it in the island; the species is not reported further south than this island.

Prunella, (*Brunella*) [LINN., Gen. Pl. ed. 1. p. 177 (1737)] BENTH., Lab. Gen. et Sp. p. 419 (1832), in DC. Prodr. XII. p. 409 (1848), et BENTH. et HOOK. f. Gen. Pl. II. p. 1203 (1876); ENDL., Gen. Pl. p. 620, n. 3624 (1836-40); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 241 (1894); KUDO, Lab. Sino-Jap. Prodr. p. 248 (1929); LEMÉE, Dict. Gen. Pl. Phan. I. p. 693 (1929)

Prunella vulgaris, LINN., Sp. Pl. ed. 1. p. 600 (1753); THUNB., Fl. Jap. p. 250 (1784); BENTH., Lab. Gen. et Sp. p. 417 (1832), et in DC. Prodr. XII. p. 410 (1848); WIGHT, Ic. Pl. Ind. Or. t. 1448 (1850); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 110 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 376 (1875); FR., Pl. David. I. p. 241 (1884); HOOK. f., Fl. Brit. Ind. IV. p. 670 (1885); FORB. et HEMSL., Ind. Fl. Sin.

II. p. 299 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 314 (1906); NAK., Fl. Kor. II. p. 147 (1911); KUDO, Lab. Sino-Jap. Prodr. p. 248 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929)

Syn. *Brunella vulgaris*, LINN. var. *vulgaris*, BENTH., Lab. Gen. et Sp. p. 417 (1832-36¹); MAK., in Tokyo Bot. Mag. X. p. 66 (1896); MATSUM., Ind. Pl. Jap. II. 2. p. 537 (1912); MATSUM. et KUDO, in Tokyo Bot. Mag. XXVI. p. 297 (1912)

Prunella vulgaris, LINN. var. *elongata*, BENTH., Lab. Gen. et Sp. p. 417 (1832-36¹); MAK., in Tokyo Bot. Mag. X. p. 66 (1896); MATSUM., Ind. Pl. Jap. II. 2. p. 537 (1912); MATSUM. et KUDO, in Tokyo Bot. Mag. XXVI. p. 297 (1912); NAK., in Tokyo Bot. Mag. XXXV. p. 191 (1921)

Prunella japonica, MAK., in Tokyo Bot. Mag. XXVIII. p. 158 (1914) p.p.

Prunella vulgaris, LINN. var. *japonica*, KUDO, in Journ. Coll. Sc. Imp. Tokyo XLIII. 8. p. 23 (1921) p.p.

Nom. Jap. *Utubogusa*

Leg. Ipse, Jul. 26, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species is collected in waste lands and by the roadside, and is common throughout Japan.

Scutellaria, [LINN., Gen. ed. 1. n. 493 1737¹] et Sp.

Pl. ed. 1. p. 598 (1753; BENTH., Lab. Gen. et Sp. p. 419 (1832-36¹), in DC. Prodr. XII. p. 412 (1848, et in BENTH. et HOOK. f. Gen. Pl. II. p. 1201 (1876¹); ENDL., Gen. Pl. p. 620 n. 3626 (1836-40¹); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 225 (1894; BAKER, in THISELTON-DYER Fl. Trop. Afr. V. p. 461 (1897; KUDO, Lab. Sino-Jap. Prodr. p. 250 1929

Scutellaria indica, LINN., Sp. Pl. ed. 1. p. 600 1753; BENTH., Lab. Gen. et Sp. p. 428, 1832-36¹, in DC. Prodr. XII. p. 417 (1848, et Fl. Hongk. p. 278 (1861¹); MAXIM., in Bull. Soc. Nat. Mosc. p. 42 (1879; FR., Pl. David. I. p. 240 (1884¹); FORB. et HEMSLE., Ind. Fl. Sin. II. p. 295 (1890; DIELS, Fl. Cent. Chin. p. 552 (1900¹); MATSUM. et HAY., Ennm. Pl. Formos. p. 313 (1906¹); MATSUM., Ind. Pl. Jap. II. 2. p. 550 (1912¹); NAK., in Tokyo Bot. Mag. XXXV. p. 196 (1921¹); KUDO, Lab. Sino-Jap. Prodr. p. 255 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1035 (1931)

Syn. *Scutellaria pekinensis*, MAXIM., Prim. Fl. Amur. p. 476 1859

Scutellaria japonica, MORR. et DECNE. var. *typica*, NAK., Fl. Kor. II. p. 144 (1911

Nom. Jap. *Kobano-tatunamisô*

Lcg. Ipse, Kurio, Mart. 22, 1923.

Distr. Honsyû, Tanegasima, Taiwan, Korea, Manchuria, China.

Note. The species grows in somewhat open lands near the sea level.

var. *yakusimensis*, MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929¹), et in Journ. Trop.

Agr. II. p. 34 (1930)

Nom. Jap. *Yakusima-nam:iki*

Leg. Ipse, Kosugidani, Jun. 8, 1928.

Distr. Endemica.

Note. The species grows as undergrowth near small streams in the lauri-aciculisilvae, and also found on somewhat sunny ground in the *Pseudosasa Owatarii* Association.

Scutellaria ussuriensis, KUDO, var. *typica*, form. *humilis*, (MAK.) KUDO, Lab. Sino-Jap. Prodr. p. 257 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929)

Syn. *Scutellaria indica*, LINN. var. *japonica*, FR. et SAV. form. *humilis*, MAK., in Tokyo Bot. Mag. X. p. 314 (1896), et XVIII. p. 46 (1904)

Nom. Jap. *Sisoba-tatunamisô*

Leg. Ipse, Issô. Mart. 21, 1923.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species occurs by the roadside in low lands, and in waste places.

Ajuga, [LINN., Gen. Pl. ed. 1. p. 167 (1737) et Sp. Pl. ed. 1. p. 561 (1753); BENTH., Lab. Gen. et Sp. p. 690 (1835), in DC. Prodr. XII. p. 595 (1848), et in BENTH. et HOOK. f. Gen. Pl. II. p. 1222 (1876); Endl. Gen. Pl. n. 3680 (1836-40); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 209 (1894); KUDO, Lab. Sino-Jap. Prodr. p. 276 (1929); LEMÉE, Dict. Gen. Pl. Phan. I. p. 133 (1929)

Ajuga decumbens, THUNB., Fl. Jap. p. 243 (1784); WILLD., Sp. Pl. III. p. 8 (1800); BENTH., Lab. Gen. et Sp. p. 697 (1835), et DC. Prodr. XII. p. 598 (1848); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 114 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 382 (1875); MAXIM., in Mém. Biolog. XI. p. 820 (1883); FORB. et HEMSL., Ind. Fl. Sin. II. p. 315 (1891); NAK., Fl. Kor. II. p. 156 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 535 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 115 (1929); YAMAZUTA, List Manch. Pl. p. 233 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1007 (1931)

Syn. *Ajuga remota*, A. GRAY, in Narr. Perr. Exped. II. p. 316 (1856)

Ajuga decumbens, THUNB. var. *sinuata*, FR. et SAV., Enum. Pl. Jap. I. p. 382 (1875)

Nom. Jap. *Kiransô*

Leg. Ipse, Hirauti, Jul. 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, Manchuria, China.

Note. The species is found by the roadside or in waste lands near the dwellings.

Teucrium, [LINN., Syst. ed. 1. (1735) et Sp. Pl. ed. 1. p. 562 (1753); BENTH., Lab. Gen. et Sp. p. 660 (1835), in DC. Prodr. XII. p. 574 (1848), et in BENTH. et HOOK. f. Gen. Pl. II. p. 1221 (1876); ENDL., Gen. Pl. p. 631 n. 3679 (1836-40); BRIQ., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. a. p. 210 (1894); KUDO, Lab. Sino-Jap. Prodr. p. 290 (1929)

Teucrium japonicum, HOUTT., Nat. Hist. IX. p. 282 (1778); WILLD., Sp. Pl. III. p. 23 (1800); BENTH., in DC. Prodr. XII. p. 581 (1848); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 113 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 391 (1875); MAXIM., in Mém. Biolog. XI. p. 824 (1883); FORB. et HEMSL., Ind. Fl. Sin. II. p. 312 (1890); NAK., Fl. Kor. II. p. 157 (1911); MATSUM., Ind. Pl. Jap. II. p. 552 (1912); KUDO, Lab. Sino-Jap. Prodr. p. 293 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 116 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1039 (1931)

Syn. *Teucrium virginicum*, (non LINN.) THUNB., Fl. Jap. p. 244 (1784)

Teucrium brevispicum, NAK., in Tokyo Bot. Mag. XXXIV. p. 48 (1920)

Nom. Jap. *Nigakusa*

Leg. Ipse, Jul. 20, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, China.

| Names of Plants | Regions | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------------------|------------|-------------|-------|--------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsū Prop. | Kyūsū | Sikoku | Honsyū | Korea |
| | | | | | | | | | | | | |
| <i>Orthodon grosseserratum</i> , KUDO | | | | | | | | + | + | + | + | + |
| <i>Orthodon punctatum</i> , KUDO | | | | + | + | | | + | + | + | + | + |
| <i>Satureia confinis</i> , KUDO | | + | + | + | + | | | + | + | + | + | + |
| <i>Satureia chinensis</i> , BRIQ. | | + | + | + | + | | | + | + | + | + | + |
| <i>Satureia ussuriensis</i> , KUDO, var. <i>yakusimensis</i> , MASAMUNE | | | | | | | | + | + | + | + | + |
| <i>Isodon glaucocalyx</i> , KUDO, var. <i>japonicus</i> , KUDO | | | | | | | + | + | + | + | + | + |
| <i>Isodon inflexus</i> , KUDO | | | | | | | + | + | + | + | + | + |
| <i>Salvia japonica</i> , THUNB. f. <i>chinensis</i> , KUDO | | | | | | | | + | | + | | + |
| <i>Prunella vulgaris</i> , LINN. | | + | + | | | | + | + | + | + | + | + |
| <i>Scutellaria indica</i> , LINN. | | + | | | | | + | + | + | + | + | + |
| <i>S. i.</i> var. <i>yakusimensis</i> , MASAMUNE | | | | | | | | | | | | |
| <i>Scutellaria ussuriensis</i> , KUDO, var. <i>typica</i> , f. <i>humilis</i> , KUDO | | | | | | | | + | + | + | | |
| <i>Ajuga decumbens</i> , THUNB. | | | | | + | | + | + | + | + | + | + |
| <i>Teucrium japonicum</i> , HOUTT. | | | | | | | | + | + | + | + | + |
| <i>Teucrium Miquelianum</i> , KUDO | | + | | + | | | + | + | + | + | + | + |
| <i>Teucrium viscidum</i> , BL. | + | + | + | + | | | | | | + | | + |
| Total | 18 | 1 | 6 | 5 | 6 | 7 | 15 | 14 | 15 | 11 | 5 | 6 |
| Percentage | 6 | 33 | 28 | 33 | 41 | 83 | 78 | 83 | 61 | 28 | | 33 |
| (Southern elements 8) | | | | | | (Northern elements 16) | | | | | | |

Taking the distribution of the plants of this family indigeneous to this island into consideration it will be perceived that the flora of the island is related more to the northern floral regions than to the southern ones.

Solanaceae

Solanaceae, HALL., Enum. Stirp. Helvet. I. p. 34 (1742)

Lycium, [LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed.

1. p. 191 (1753); ENDL., Gen. Pl. n. 3863 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 900 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 13 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 202 (1932)

Syn. *Jasminoides*, MEDIK., Phil. Bot. I. p. 134 (1789)

Panzeria, J. F. GMEL., Syst. II. p. 247 (1791)

Lycium chinense, MILLER, Gard. Dic. ed. 8. n. 5 (1768); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 267 (1836-40); DC., Prodr. XIII. 1. p. 510 (1852); MAXIM., Prim. Fl. Amur. p. 475 (1859); BENTH., Fl. Hongk. p. 245 (1861); FR. et SAV., Enum. Pl. Jap. I. p. 341 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 175 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 274 (1906); KOM., Fl. Mansh. III. p. 403 (1907); NAK., Fl. Kor. II. p. 112 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 183 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 177 (1918); MERR., Enum. Hainan Pl. p. 163 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 117 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1045 (1931)

Nom. Jap. *Kuko*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species was once collected by Dr. KUDO in the island, and is common in the Far East.

Physalis, [LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed.

1. p. 182 (1753); DUNAL, in DC. Prodr. XIII. 1. p. 434 (1852); ENDL., Gen. Pl. n. 3851 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 890 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 19 (1891)

Syn. *Alkekengi*, [TOURN.] ex ADANS. Fam. II. p. 218 (1763)

Herschelia, BOWDICH, Maderia. p. 159 (1825)

Physalis angulata, LINN., Sp. Pl. ed. 1. p. 183 (1753); THUNB., Fl. Jap. p. 91 (1784); DUNAL, in DC. Prodr. XIII. 1. p. 448 (1852); MIQ., Fl. Ind. Bat. II. p. 664 (1856), et in Ann. Mus. Bot. Lugd. Bat. III. p. 118 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 340 (1875), et II. p. 453 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 173 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 274 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 556 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 183 (1912); BONATI, in Lecomte, Fl. Ind. Chin. IV. 3. p. 335 (1915); MORI, Enum. Pl. Cor. p. 309 (1922); MERR., Enum. Philipp. Pl. III. p. 423 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 117 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1048 (1931)

Nom. Jap. *Sennari-hôzuki*

Leg. Ipse, Ambô.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. The species is found in waste or cultivated lands. It is common throughout the world and is reported to be a native of tropical America.

Tubocapsicum, MAK., in Tokyo Bot. Mag. XXII.

p. 18 (1908).

Syn. *Capsicum*, (non, LINN.) FR. et SAV., Enum. Pl. Jap. II. p. 452 (1879)
Capsicum, Sect. *Tubocapsicum*, WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV.
 iii. b. p. 21 (1891)

Tubocapsicum anomalum, MAK., in Tokyo Bot. Mag. XXII. p. 19 (1908); MORI, Enum.
 Pl. Cor. p. 310 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 117 (1929); MAK. et
 NEM., Fl. Jap. ed. 2. p. 1052 (1931)

Syn. *Capsicum anomalum*, FR. et SAV., Enum. Pl. Jap. II. p. 452 (1876); MATSUM.
 et HAY., Enum. Pl. Formos. p. 269 (1903); MATSUM., Ind. Pl. Jap. II. 2. p.
 553 (1912)

Nom. Jap. *Hadaka-hôzuki*

Leg. Ipse, Kosugidani, Jul. 28, 1930.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan,
 Korea.

Note. The species is common in southern Japan, and in the island it is found
 in low waste lands or by the roadside.

Solanum, [TOURN., ex LINN. Syst. ed. 1 1735]
 et Sp. Pl. ed. 1. p. 184 (1753); ENDL., Gen. Pl. n. 3855 (1836-40); DUNAL, in DC.
 Prodr. XIII. i. p. 27 (1852); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 888
 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 21 1891

Syn. *Melongens*, (TOURN.) MILL., Gard. Dict. ed. 6 (1752)

Battata, HILL., Hort. Kew. p. 146 (1768)

Solanum biflorum, LOUR., Fl. Cochinch. p. 129 (1790); HOOK. et ARNOT., Bot. Capt.
 Beech. Voy. p. 267 (1836-40); DUNAL, in DC. Prodr. XIII. 1. p. 232 (1852); MIQ.,
 in Ann. Mus. Bot. Lugd. Bat. III. p. 118 (1867); C. B. CLARKE, in HOOK. f. Fl.
 Brit. Ind. IV. p. 232 (1883); FORB. et HEMSL., Ind. Fl. Sin. II. p. 169 (1890);
 DIELS, Fl. Cent. Chin. p. 564 (1900); MATSUM. et HAY., Enum. Pl. Formos. p.
 271 (1906); HATTORI, Pfl.-Geog. Bonn. p. 34 (1908); MATSUM., Ind. Pl. Jap. II. 2.
 p. 556 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 183 (1912); BONATI, in
 LECOMTE, Fl. Ind. Chin. IV. 3. p. 320 (1915); RIDLEY, Fl. Malay, II. p. 467
 (1923); MERR., Enum. Philipp. Pl. III. p. 425 (1923), et Enum. Hainan Pl. p. 117
 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 118 (1929); MAK. et NEM., Fl. Jap.
 ed. 2. p. 1049 (1931)

Syn. *Solanum decemdentatum*, ROXB., Fl. Ind. II. p. 247 (1824), et ed. 2. I. p. 565
 (1832); BENTH., Fl. Hongk. p. 242 (1861)

Nom. Jap. *Meziro-hôzuki*

Leg. Ipse, Yosida, Mart. 3, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China,
 Philippines.

Note. The plant is rather common in the Far East and in the island it grows by
 the roadside or on forest edges from the sea level up to about 700 m above.

Solanum lyratum, THUNB., Fl. Jap. p. 92 (1784); WILLD., Sp. Pl. II. 2. p. 1027 (1799);
 DUNAL, in DC. Prodr. XIII. 1. p. 79 (1852); MIQ., in Ann. Mus. Bot. Lugd. Bat.
 III. p. 118 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 339 (1875); NAK., Fl. Kor. II.
 p. 113 (1911); LOESN., Pfl.-Welt. Kiautsch. Geb. p. 178 (1918); MASAMUNE, Prel.
 Rep. Veg. Yak. p. 117 (1929)

Syn. *Solanum Dulcamara*, LINN. var. *lyratum*, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II.
 p. 147 (1846); MAK., in Tokyo Bot. Mag. IX. p. (112) (1895); MATSUM.,

et HOOK. f. Gen. Pl. II. p. 947 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 72 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 345 (1932)

Mazus japonicus, O. KUNTZE, Rev. Gen. Pl. II. p. 462 (1891); MAK., in Tokyo Bot. Mag. XVI. p. 170 (1902); NAK., Fl. Kor. II. p. 119 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 563 (1912); MIURA, List Pl. Manch. & Mong. p. 321 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 118 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1063 (1931)
Syn. *Lindernia japonica*, THUNB., Fl. Jap. p. 253 (1784); WILLD., Sp. Pl. III. p. 326 (1800); PERS., Syn. Pl. II. p. 166 (1807).

Mazus rugosus, LOUR., Fl. Cochinch. p. 385 (1790); AIT., Hort. Kew ed. 2. IV. p. 53 (1812); SPRENG., Syst. Veg. II. p. 803 (1825); BENTH., in DC. Prodr. X. p. 375 (1846), et Fl. Hongk. p. 247 (1861); GRAY, in Narr. Perry Exped. II. p. 316 (1856); MAXIM., Prim. Fl. Amur. p. 205 (1859), et in Mém. Biolog. IX. p. 402 (1874); REGEI., Tent. Fl. Ussur. p. 119 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 116 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 344 (1875); FR., Pl. David. I. p. 222 (1884); HOOK. f., Fl. Brit. Ind. IV. p. 259 (1884); HILDEB., Fl. Hawai. Isl. p. 324 (1888); FORB. et HEMSL., Ind. Fl. Sin. II. p. 183 (1890); PALIB., Consp. Fl. Kor. II. p. 20 (1900); DIELS, Fl. Cent. Chin. p. 566 (1900)

Nom. Jap. Tokiwahaze

Leg. Ipse, April. 2, 1927.

Distr. Yezo, Honsyû, Sikoku, Amami-Ôsima, Okinawa, Korea, Manchuria, China.

Note. The species grows in cultivated lands or by the roadside near the sea level.

Mazus stolonifer, MAK., in Cat. Sem. Hort. Bot. Univ. Tokyo p. 17 (1896); MAK. et NEM., Fl. Jap. ed. 2. p. 1063 (1931)

Syn. *Vandellia japonica*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 118 (1865)

Mazus rugosus, var. *stolonifer*, MAXIM., in Mém. Biolog. IX. p. 403 (1874)

Mazus rugosus, var. *rotundifolius*, FR. et SAV., Enum. Pl. Jap. I. p. 344 (1875)

Mazus rugosus, var. *macranthus*, FR. et SAV., Enum. Pl. Jap. I. p. 344 (1875)

Mazus japonicus, non O. KUNTZE MAK., in Tokyo Bot. Mag. XI. p. (191)
 (1897, et XV. p. 96 (1901))

Mazus Miquelii, MAK., in Tokyo Bot. Mag. XVI. p. 162 (1902); MATSUM., Ind. Pl. Jap. II. 2. p. 563 (1912)

Nom. Jap. Sagigoke

Leg. Ipse, Onoaida, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species has its southern limit in this island and is found at low altitudes.

Gratiola, (RUPP.) LINN., Sp. Pl. ed. 1. p. 17 (1753); ENDL., Gen. Pl. n. 3946 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 953 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 75 (1891); LEMÉE, Dict. Gen. Pl. Phan. III. p. 339 (1931)

Syn. *Gonatia*, NUTT., ex DC. Prodr. X. p. 595 (1846)

Gratiola violacea, MAXIM., in Mém. Biolog. IX. p. 407 (1875); KOM., Fl. Mansh. III. p. 422 t. V. (1907); FR. et SAV., Enum. Pl. Jap. II. p. 456 (1876); NAK., Fl. Kor. II. p. 120 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 1058 (1931)

Syn. *Gratiola saginoides*, MATSUM. var. *violacea*, MATSUM., Ind. Pl. Jap. II. 2. p. 560 (1912)

Fratiola violacea, var. *genuinina*, FR. et SAV., Enum. Pl. Jap. II. p. 456 (1876,

Nom. Jap. *Sawa-tôgarasi*

Leg. Ipse, Nagata, Aug. 20, 1928.

Distr. Sikoku, Kyûsyû, Amami-Ôsima, Korea, Manchuria.

Note. Grows in cultivated lands or by the roadside.

Lindernia, (TOURN.) MILL., Gard. Dict. ed. 6 (1752); ALL., Misc. Taurin. III. p. 178, t. 5 (1755); ENDL., Gen. Pl. n. 3758 (1836-40); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 59 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 107 (1932)

Lindernia crustacea, MUELL., Census. p. 97 (1882); MERR., Enum. Philipp. Pl. III. p. 437 (1923)

Syn. *Capraria crustacea*, LINN., Mant. I. p. 87 (1767)

Torenia crustacea, CHAM. et SCHL., in Linnaea, II. p. 570 (1827); MAK., in Tokyo Bot. Mag. XI. p. (390) (1897); MATSUM., Ind. Pl. Jap. II. 2. p. 570 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 118 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1073 (1931)

Torenia varians, ROXB., Fl. Ind. III. p. 96 (1832)

Vandellia crustacea, BENTH., Scroph. Ind. p. 35 (1835, in DC. Prodr. X. p. 413 (1846), et in Fl. Hongk. p. 251 (1861); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 202 (1836); MAXIM., in Mém. Biolog. IX. p. 412 (1874); HOOK. f., Fl. Brit. Ind. IV. p. 279 (1884); FORB. et HEMSLEY, Ind. Fl. Sin. II. p. 189 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 279 (1906)

Lindernia pyxidaria, ALL.; BENTH., in DC. Prodr. X. p. 418 (1846); MAXIM., Prim. Fl. Amur. p. 205 (1859); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 80 (1891); KOM., Fl. Mansh. III. p. 423 (1907); NAK., Fl. Kor. II. p. 120 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 262 (1930); MATSUM., Ind. Pl. Jap. II. 2. p. 562 (1912)

Nom. Jap. *Urikusa*

Leg. Ipse, Aug. 13, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan Bonins, Korea, Manchuria, China.

Note. Grows in low and waste lands or in cultivated lands.

Ilysanthes, RAF., Ann. Nat. p. 13 (1820); BENTH., in DC. Prodr. X. p. 343 (1846), et in BENTH. et HOOK. f. Gen. Pl. II. pp. 955, 956 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 80 (1891); LEMÉE, Dict. Gen. Pl. Phan. III. p. 746 (1931)

Syn. *Bonnaya*, LINK et OTTO, Ic. Pl. Select. p. 25, t. 11 (1820); ENDL., Gen. Pl. n. 3948 (1836-40)

Ilysanthos, ST.-LAG., in Ann. Soc. Lyon. VII. p. 56 (1880)

Ilysanthes antipoda, (LINN.) MERR., Interp. Herb. Amb. p. 467 (1917), Sp. Blanc. p. 349 (1918), et Enum. Philipp. Pl. III. p. 439 (1923)

Syn. *Ruellia antipoda*, LINN., Sp. Pl. ed. 1. p. 635 (1753)

Gratiola veronicaefolia, RETZ., Obs. IV. p. 8 (1786)

Bonnaya veronicaefolia, SPRENG., Syst. Veg. I. p. 41 (1825); BENTH., in DC. Prodr. X. p. 421 (1846), et Fl. Hongk. p. 252 (1861); MAXIM., in Mém. Biolog. IX. p. 421 (1875); HOOK. f., Fl. Brit. Ind. IV. p. 285 (1884); FORB. et

HEMSL., Ind. Fl. Sin. II. p. 192 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 281 (1906)

Ilysanthes veronicifolia, URB. var. *verbenaefolia*, MAK. et NEM., Fl. Jap. ed. 1. p. 214 (1925), et ed. 2. p. 1059 (1931)

Ilysanthes antipoda, MERR. var. *verbenaefolia*, (MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 117 (1929)

Nom. Jap. *Suzumeno-tôgarasi*

Leg. Ipse, Sept. 5, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines.

Note. Grows near cultivated lands or by the roadside; common in the southern part of Japan.

Centranthera, R. BR., Prodr. p. 438 (1810); ENDL.,

Gen. Pl. n. 4002 (1836-40¹); BENTH., in DC. Prodr. X. p. 508 (1846), et BENTH. et HOOK. f. Gen. Pl. II. p. 969 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 94 (1891¹); LEMÉE, Dict. Gen. Pl. Phan. II. p. 15 (1930)

Centranthera Brunoniana, WALL., Cat. n. 3882 (1828¹); BENTH., in DC. Prodr. X. p. 525 (1846); HOOK. f., Fl. Brit. Ind. IV. p. 301 (1884); FORB. et HEMSL., Ind. Fl. Sin. II. p. 201 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 283 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 190 (1912¹); MORI, Enum. Pl. Cor. p. 311 (1922¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 117 (1929¹); MAK. et NEM., Fl. Jap. ed. 2. p. 1055 (1931)

Syn. *Centranthera hispida*, BENTH., Fl. Hongk. p. 254 (1861¹)

Nom. Jap. *Gomakusa*

Leg. Ipse, Ambô, Aug. 12 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, China.

Note. Grows in waste places or in cultivated lands.

Melampyrum, [TOURN., ex LINN. Syst. ed. 1

1735] et Sp. Pl. ed. 1. p. 605 1753¹; BENTH., in DC. Prodr. X. p. 528 (1846¹), et in BENTH. et HOOK. f. Gen. Pl. II. p. 979 (1876); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 99 (1891¹)

Melampyrum laxum, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 123 (1865¹); NAK., in Tokyo Bot. Mag. XXI. p. (332) (1907), et XXIII. p. 10 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 564 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 118 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1064 (1931)

Nom. Jap. *Miyama-manakona*

Leg. Ipse, Aug. 31, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû.

Note. The species is found in open places in the laurishlvae or in the Pseudosasa Owatarii Association, and has its southern limit in this island.

Pedicularis, [TOURN., ex LINN. Syst. ed. 1 (1735¹)

et Sp. Pl. ed. 1. p. 607 (1753); ENDL., Gen. Pl. n. 4015 (1836-40); BENTH., in DC. Prodr. X. p. 528 (1846¹), et in BENTH. et HOOK. f. Gen. Pl. II. p. 978 (1876¹); WETTST., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 103 (1891)

Syn. *Sceptrom Carolium*, LINN., Fl. Lapp. p. 197 (1737)

Nelensia, POIR., Illustr. Gen. III. p. 568 (1823)

Orobanchaceae, LINDL., Nat. Syst. ed. 2. p. 287 (1836); BECK., in ENGL. u. PRANT., Nat. Pfl.-fam. IV. iii. b. p. 123 (1891)

| | Regions | | | | | |
|--|--------------------------------|----------------|--|--|--|--|
| Names of Plants | Philippines | | | | | |
| | Bonins | | | | | |
| | Taiwan | | | | | |
| | Okinawa | Ryūkyūs | | | | |
| | Amami-Oshima | | | | | |
| | Tanegashima | Kyūshū | | | | |
| | Kyūsyū Prop. | | | | | |
| | Sikoku | | | | | |
| | Honsyū | | | | | |
| | Korea | | | | | |
| | Yezo & Southern Kuriles | | | | | |
| | Saghalien | | | | | |
| | Northern Kuriles & Kamitchatka | | | | | |
| | Manchuria, Amur & Usuri | | | | | |
| | (China) | | | | | |
| <i>Lysionotus pauciflorus</i> , MAXIM. | + + + + + | | | | | |
| <i>Isanthera discolor</i> , MAXIM. | + + + + + | | | | | |

Leg. Ipse, Yosida, Mart. 21, 1923.

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China, Philippines.

Note. The species is found in low, wet and somewhat shady places and it is not yet reported in lands further north than Tanegasima.

Looking at the above table which shows the distribution of the species of this family, it will be perceived that the island is situated in the changing region of the elements. Of the two elements of this family in the island, one is a northern element that has the southern limit of habitat in this island, while the other is a southern element which is not yet found further north than Tanegasima.

Lentibulariaceae

Lentibulariaceae, LINDL., Nat. Syst. ed. 2. p. 286 1836,

Utricularia, [LINN., Syst. ed. 1 1735] et Sp. Pl. ed. 1. p. 18 1753 ; DC., Prodr. VIII. p. 3 1844 ; ENDL., Gen. Pl. n. 4193 1836-40 ; BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 987 1876 ; KAMIENSKI, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 119 1891

Utricularia yakusimensis, MASAMUNE, sp. nov.

Herbae caenoseo-terrestres, radicibus filiformibus. Scapus erectus gracilis ca. 3 cm altus. Folia obovato-lanceolata ca. 1 cm longa 1.5 mm lata. Flores 2-3 racemosi, bracteis minimis ovato-rotundatis ca. 0.5 mm longis, pedicellis gracilibus ca. 2 mm longis. Calyx 2-partitus, segmentis ovatis posticum maiora quam antiqua apice saepe emarginatis. Corollae calcar incurvum, labium posticum erectum ca. 2 mm longum 0.5 mm latum vix emarginatum, anticum patens, ca. 2 mm longum, 1 mm latum, basi supra convexum, margine reflexo-integrum. Stamina cum ovarium ca. 0.8 mm longa.

Nom. Jap. *Yakusima-mimikaka*

| Name of Plant | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|------------|------------|-------------------------------|-------|--|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōsima | Ryūkyūs | Tanegasima | Kyūsū Prop. | Kyūsū | |
| | | | | | | | | Sikoku | | |
| | | | | | | | | Hōnsyū | | |
| | | | | | | | | Korea | | |
| | | | | | | | | Yezo & Southern Kuriles | | |
| | | | | | | | | Saghalien | | |
| | | | | | | | | Northern Kuriles & Kamtchatka | | |
| | | | | | | | | Manchuria, Amur & Usuri | | |
| | | | | | | | | China | | |
| Utricularia yakusimensis, MASAMUNE . . . | | | | | | (endemica) | | | | |

Leg. Ipse, Aug. 31, 1926.

Note. The characteristic of this species places it between *U. affinis*, and *U. racemosa*. It is found in wet but somewhat sandy places from 600 m up to 1700 m above the sea level and is restricted to this island.

The island has only one endemic species of this family, and its related species is found both in the southern and northern regions beyond Yakusima. I cannot decide therefore in which region the island should be included.

Acanthaceae

Acanthaceae, JUSS., Dict. Sc. Nat. I. p. 96 (1804); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1060 (1876)

Strobilanthes, BL., Bijdr. pp. 781, 792 (1826);
ENDL., Gen. Pl. n. 4053 (1836-40); ESENBECK, in DC. Prodr. XI. p. 177 (1847);
BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1086 (1876); LINDAU, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 304 (1895)

Syn. *Adenacanthus*, NEES, in WALL. Pl. As. Rar. III. p. 75 (1832)

Strobilanthes japonicus, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 124 (1865); FR. et SAV., Enum. Pl. Jap. I. p. 356 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 582 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 119 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1098 (1931)

Syn. *Ruellia japonica*, THUNB., Fl. Jap. p. 254 (1784), et Ic. Fl. Jap. 5. t. 9 (1775)

Nom. Jap. *Isehanabi*

Leg. OKUMURA! Inter Miyanoura et Yaedake, April. 11, 1906.

Distr. Kyûsyû, Sikoku.

Note. Dr. KUDO told me that Mr. OKUMURA had collected this species in the island. It has its southern limit in this island.

Justicia, [HOUST., ex LINN. Gen. Pl. ed. I. p. 4 (1737)] et Sp. Pl. ed. 1. p. 15 (1753); ENDL., Gen. Pl. n. 4089 (1836-40); ESENBECK, in DC. Prodr. XI. p. 426 (1847); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1108 (1876); LINDAU, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 346 (1895); LEMÉE, Dict. Gen. Pl. Phan. p. 830 (1931)

Syn. *Ecbolium*, [RIV., ex LINN. Syst. ed. 1 (1735)] O. KUNTZE, Rev. Gen. Pl. II. p. 486 (1891)

Vada-Kodi, ADANS., Fam. II. p. 201 (1763)

Aldinia, SCOP., Introd. p. 173 (1777)

Rostellularia, REICHB., Handb. p. 190 (1838); NEES, in DC. Prodr. XI. p. 368 (1847)

Justicia procumbens, LINN., Sp. Pl. ed. 1. p. 15 (1753); ANDERS., in Journ. Linn. Soc. Bot. IX. p. 511 (1865); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. IV. p. 539 (1885); FORB. et HEMSL., Ind. Fl. Sin. II. p. 246 (1890); MATSUM. et HAY., Enum. Pl. Formos. p. 295 (1906); NAK., Fl. Kor. II. p. 133 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 200 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 581

(1912); MERR., Enum. Philipp. Pl. III. p. 490 (1923), et Enum. Hainan Pl. p. 171 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 119 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1097 (1931)

Syn. *Justicia japonica*, THUNB., Fl. Jap. p. 20 (1784)

Rostellularia procumbens, NEES, in WALL. Pl. As. Rar. III. p. 101 (1832); DC., Prodr. XI. p. 371 (1847); FR. et SAV., Enum. Pl. Jap. I. p. 356 (1875)

Nom. Jap. *Kitune-no-mago*

Leg. Ipse, Ambô.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China, Philippines.

Note. Occurs in the plain.

| Names of Plants | Regions | | | | | | | | | | | |
|---|----------|-----|--------|---------|-------------|------------|--------------|--------|--------|-------|-------------------------|--|
| | Philipp. | Bo- | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien Northern Kuriles & Kamchatka Manchuria, Amur & Ussuri China |
| <i>Strobilanthes japonicus</i> , MIQ. | - | - | - | - | - | - | + | + | - | - | - | - |
| <i>Justicia procumbens</i> , LINN. | + | + | + | + | + | + | + | + | + | + | - | + |

The fact that *Strobilanthes japonicus* has its southern limit in this island denotes that the island has a close relationship with Kyûsyû, Sikoku, in respect of this family.

Plantaginaceae

Plantaginaceae, LINDL., Nat. Syst. ed. 2. p. 267 (1836)

Plantago, [TOURN., ex LINN. Syst. ed. 1 (1735)]

et Sp. Pl. ed. 1. p. 112 (1753); ENDL., Gen. Pl. n. 2170 (1836-40); DECNE., in DC. Prodr. XIII. 1. p. 694 (1852); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 1224 (1876); HARMS et REICH., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iii. b. p. 369 (1895)

Plantago major, LINN. var. *asiatica*, DECNE., in DC. Prodr. XIII. 1. p. 694 (1852); MIYABE, Fl. Kuril. p. 256 (1890); MAK., in Tokyo Bot. Mag. XXI. p. 161 (1907); NAK., Fl. Kor. II. p. 153 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 263 (1930); MIY. et MIYAKE, Fl. Saghal. p. 372 (1915); MATSUM., Ind. Pl. Jap. II. 2. p. 583

Note. Grows in the plains or by the roadside.

Note. Occurs in the plains or in the littoral regions.

Note. This endemic species is found in the *Pseudosasa Owatarii* Association about 1700 m up to the summit of Miyanouragadake.

As regards this family the island shows no special relationship either with the northern or with the southern regions, but the

island is to some degree independent in its flora since it has one endemic species.

Rubiaceae

Rubiaceae, B. JUSS., in Hort. Trianon (1759), et ex JUSS. Gen. Pl. p. 196 (1789): HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 7 (1873)

Oldenlandia, [LINN., Gen. Pl. ed. 1. p. 362 (1737)] et Sp. Pl. ed. 1. p. 119 (1753); DC., Prodr. IV. p. 424 (1830) p.p.; ENDL., Gen. Pl. n. 3240 g. (1836-40) p.p.; HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 58 (1873) p.p.; SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 24 (1891) p.p.; LEMÉE, Dict. Gen. Pl. Phan. IV. p. 825 (1932)

Oldenlandia biflora, LINN., Sp. Pl. ed. 1. p. 119 (1753); DC., Prodr. IV. p. 426 (1830); MERR., Enum. Philipp. Pl. III. p. 492 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 1121 (1931)

Syn. *Oldenlandia paniculata*, LINN., Sp. Pl. ed. 2. p. 1667 (1763) partim.; DC., Prodr. IV. p. 427 (1830); BENTH., Fl. Hongk. p. 152 (1861); HOOK. f., Fl. Brit. Ind. III. p. 69 (1880); MAXIM., in Mém. Biolog. XI. p. 785 (1883); FORB. et HEMSL., Ind. Fl. Sin. I. p. 377 (1888); MATSUM. et HAY., Enum. Pl. Formos. p. 186 (1906); NAK., Fl. Kor. II. p. 292 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 592 (1912); HAY., Ic. Pl. Formos. II. p. 84 (1912); NAK., Fl. Sylv. Kor. XIV. p. 86 (1923)

Oldenlandia crassifolia, DC., Prodr. IV. p. 427 (1830); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929)

Nom. Jap. *Sonarenumugura*

Leg. Ipse, Jul. 26, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. The species is found on rocky beaches.

Oldenlandia diffusa, ROXB., Hort. Beng. p. 11 (1814), et Fl. Ind. I. p. 444 (1820); HOOK. f., Fl. Brit. Ind. III. p. 65 (1880); FORB. et HEMSL., Ind. Fl. Sin. I. p. 377 (1888); MATSUM., Ind. Pl. Jap. II. 2. p. 592 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 128 (1912); HAY., Ic. Pl. Formos. IX. p. 54 (1920); MORI, Enum. Pl. Cor. p. 325 (1922); MERR., Enum. Philipp. Pl. III. p. 493 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 112 (1931)

Syn. *Hedyotis diffusa*, WILLD., Sp. Pl. I. p. 566 (1797)

Oldenlandia brachypoda, DC., Prodr. IV. p. 424 (1830)

Oldenlandia herbacea, var. *uniflora*, BENTH., Fl. Hongk. p. 151 (1861)

Oldenlandia angustifolia, var. *pedicellata*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 108 (1867)

Nom. Jap. *Hutaba-mugura*

Leg. Ipse, Jul. 31, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. Occurs in the low lands.

Oldenlandia yakusimensis, MASAMUNE, in Journ. Trop. Agr. III. p. 393 (1931)

Syn. *Oldenlandia hirsuta*, (non LINN. f.) MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929)

Nom. Jap. *Yakusima-hasikagusa*

Leg. Kosugidani, Jul. 23, 1928.

Note. An endemic plant to this island. It grows and lives in wet spots in the lauri-aciculisilvae, e. g. near streams or small springs.

Hedyotis, [LINN., Nov. Pl. Gen. p. 7 (1747)] et

Amoen. Acad. ed. 1. p. 101 (1753)

Syn. *Oldenlandia*, LINN., Sp. Pl. ed. 1. p. 119 (1753) p.p.; BENTH. et HOOK. f., Gen. Pl. II. p. 58 (1873) p.p.

Metabolos, BL., Bijdr. p. 990 (1826)

Oldenlandia, Sect. *Hedyotis*, SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 25 (1891)

Hedyotis tenelliflora, BL., Bijdr. p. 971 (1825); HOOK. f., Fl. Brit. Ind. III. p. 60 (1882); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 128 (1912); MERR., Enum. Philipp. Pl. III. p. 500 (1923); RIDLEY, Fl. Malay, II. p. 51 (1923); MASAMUNE, in Journ. Trop. Agr. II. p. 37 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1116 (1931)

Syn. *Hedyotis angustifolia*, CHAM. et SCHLECT., in Linnaea IV. p. 153 (1829); DC., Prodr. IV. p. 419 (1830)

Oldenlandia angustifolia, BENTH., Fl. Hongk. p. 151 (1861)

Hedyotis hispida, (non RETZ.) MATSUM. et HAY., Enum. Pl. Formos. p. 185 (1906); HAY., Ic. Pl. Formos. II. p. 83 (1912)

Nom. Jap. *Ke-nihoigusa*

Lcg. Ipse, Jun. 20, 1927.

Distr. Amami-Ōsima, Okinawa, Taiwan, China, Philippines, Malay.

Note. Grows on waste land or by the roadside; has its northern limit in this island.

Ophiorrhiza, LINN., Sp. Pl. ed. 1. p. 150 (1753);

DC., Prodr. IV. p. 415 (1830); ENDL., Gen. Pl. n. 3245 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 63 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 29 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 864 (1932)

Ophiorrhiza inflata, MAXIM., in Mém. Biolog. XII. p. 729 (1888); HAY., Ic. Pl. Formos. IX. p. 56, f. 23-2 (1920); MAK. et NEM., Fl. Jap. ed. 2. p. 1123 (1931)

Nom. Jap. *Yaeyama-inamorishō*

Leg. Ipse, Onoaida, Jul. 1, 1928.

Distr. Okinawa, Taiwan.

Note. This small herbaceous plant is found as undergrowth in the laurisilvae at about 200 m above the sea level.

Ophiorrhiza japonica, BL., Bijdr. p. 978 (1826); DC., Prodr. IV. p. 416 (1830); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 177 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 108 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 208 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 378 (1888); MATSUM., in Tokyo Bot. Mag. XIV. p. 146 (1900); DIELS, Fl. Centr. Chin. p. 580 (1901); MATSUM. et HAY., Enum. Pl. Formos. p. 18 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 129 (1912); PITARD., in Lecomte Fl. Ind. Chin. III. p. 167 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1123 (1931)

Syn. *Ophiorrhiza japonica*, BL. var. *brevistigma*, HAY., Ic. Pl. Formos. II. p. 88 (1912)
Ophiorrhiza dimorphantha, HAY., Ic. Pl. Formos. II. p. 86 (1912), et IX. p. 56, f. 23-1 (1920)

Ophiorrhiza japonica, BL. f. *brevistigma*, HAY., Ic. Pl. Formos. II. p. 83 (1912)

Ophiorrhiza japonica, BL. f. *longistigma*, HAY., Ic. Pl. Formos. II. p. 88 (1912)

Nom. Jap. *Satuma-inamorisô*

Leg. Ipse, Jun. 8, 1928.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species grows on wet ground in the laurisilvae or in the lauri-aciculi-silvae.

Ophiorrhiza Tashiroi, MAXIM., in Mél. Biolog. XII. p. 730 (1883); MATSUM., Ind. Pl. Jap. II. 2. p. 593 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1124 (1931)

Nom. Jap. *Nagaba-inamorisô*

Leg. Ipse, Kosugidani, Mart. 19, 1923.

Distr. Amami-Ôsima, Okinawa.

Note. The species ranges throughout the Ryûkyû archipelago, and in the island it is found in the laurisilvae near the sea level.

Ourouparia, AUBL., Hist. Pl. Gui. Franc. I. p.

177, t. 68 (1775); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 57 (1891)

Syn. *Uncaria*, SCHREB., Gen. Pl. I. p. 125 (1789); DC., Prodr. IV. p. 347 (1830); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 31 (1873)

Restiaria, LOUR., Fl. Cochinch. I. p. 639 (1790)

Uruparia, O. KUNTZE, Rev. Gen. Pl. I. p. 301 (1891)

Ourouparia rhynchophylla, MATSUM., in Tokyo Bot. Mag. XIV. p. 127 (1900), et Ind. Pl. Jap. II. 2. p. 593 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 515 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929)

Syn. *Nauclea rhynchophylla*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 108 (1867)

Uncaria rhynchophylla, MIQ., Cat. Mus. Bot. Lugd. Bat. p. 44 (1870); FR. et SAV., Enum. Pl. Jap. I. p. 206 (1875); MAK. et NEM., Fl. Jap. ed. 2. p. 1130 (1931)

Nom. Jap. *Kagikazura*

Leg. Ipse, Kosugidani, Aug. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima.

Note. This climbing plant is found as a component of the laurisilvae, and is not yet reported further south than this island.

Nauclea, LINN., Sp. Pl. ed. 2. p. 243 (1762);

DC., Prodr. IV. p. 343 (1830); ENDL., Gen. Pl. n. 3280 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 31 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 57 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 654 (1932)

Syn. *Bancalus*, [RUMPH., Herb. Amb. III. p. 84, t. 55 (1743)] O. KUNTZE, Rev. Gen. Pl. I. p. 276 (1891)

Nauclea nipponica, MASAMUNE, nom. nov.

Syn. *Adina globiflora*, (non SALISB.) MAXIM., in Engl. Bot. Jahrb. VI. p. 67 (1885),

et in Bull. Acad. Sc. St. Pet. XXXI. p. 62 (1836); MATSUM., Ind. Pl. Jap. II. 2 p. 584 (1912)

Adina globiflora, var. *macrophylla*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 378, f. 199 (1922)

Nauclea orientalis, LINN. var. *macrophylla*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 511 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1121 (1931)

Nom. Jap. *Taniwatarinoki*

Leg. Onoaida, Mart. 23, 1923.

Distr. Kyûsyû, Amami-Ôsima.

Note. The species grows along streams which flow on the southern side of the island at low altitudes.

Nauclea racemosa, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 178 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 108 (1867); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 513 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1121 (1931)

Syn. *Adina racemosa*, MIQ., Cat. Mus. Bot. Lugd. Bat. p. 44 (1870) nomen; MAXIM., in Mél. Biolog. IX. p. 270 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 206 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 370 (1888); MATSUM. et HAY., Enum. Pl. Formos. p. 183 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 584 (1912)

Nauclea taiwaniana, HAY., Mat. Fl. Formos. p. 139 (1911)

Nauclea transversa, HAY., Mat. Fl. Formos. p. 139 (1911)

Nom. Jap. *Hekkanigaki*

Leg. NAOHARA! Mart. 15, 1920.

Distr. Kyûsyû, Tanegasima, Okinawa, Taiwan, China.

Mussaenda, [BURM., ex LINN. Nov. Pl. Gen. p. 10 (1747), et Amoen Acad. I. p. 394 (1749)] et Sp. Pl. ed. 1. p. 177 (1753); ENDL., Gen. Pl. n. 3313 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 64 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 63 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 598 (1932)

Syn. *Belilla*, ADANS., Fam. II. p. 159 (1763)

Mussenda, SCOP., Introd. p. 143 (1777)

Mussaenda parviflora, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 110 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 207 (1875); MATSUM., in Tokyo Bot. Mag. XIV. p. 147 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 183 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 591 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1120 (1931)

Syn. *Mussaenda glabra*, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 264 (1836-40); FORB. et HEMSL., Ind. Fl. Sin. I. p. 379 (1888); HENRY, List Pl. Formos. p. 50 (1896); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 129 (1912)

Mussaenda parviflora, MIQ. var. *formosana*, MATSUM., in Tokyo Bot. Mag. XIV. p. 147 (1900)

Nom. Jap. *Konronkwa*

Leg. Ipse, Issô, Sept. 1, 1931.

Distr. Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species occurs on somewhat sunny spots near the forest edges.

Mussaenda shikokiana, MAK., in Tokyo Bot. Mag. XVIII. p. 44 (1904), et XXV. p. 156 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 592 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 564 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1120 (1931)

Nom. Jap. *Hiroha-konronkwa*

Leg. Ambô.

Distr. Sikoku, Kyûsyû.

Note. I have never collected the species in the island, but have seen the specimen collected by a member of the staff at Ambô Forest Station. It is not yet found in lands further south than this island.

Tarenna, GAERTN., Fruct. I. p. 139. t. 28 (1788);

DC., Prodr. IV. p. 395 (1830)

Syn. *Chomelia*, [LINN., Gen. Pl. ed. 1. p. 55 (1737) O. KUNTZE, Rev. Gen. Pl. I. p. 278 (1891); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 74 (1891)]

Cupia, DC., Prodr. IV. p. 393 (1830) p.p.; ENDL., Gen. Pl. n. 3293 b (1836-40) p.p.

Webera, SCHRAB., Gen. II. p. 794 (1791); BENTH. et HOOK. f., Gen. Pl. II. p. 86 (1873)

Tarenna zeylanica, GAERTN., Fruct. I. p. 139 t. 28, f. 3 (1788; NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 561 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929)

Syn. *Webera corymbosa*, WILLD., Sp. Pl. I. p. 1224 (1797)

Cupea corymbosum, PERSOON, Syn. Pl. I. p. 200 (1805)

Cupea corymbosa, DC. Prodr. IV. p. 394 (1830)

Stylocoryne Webera, A. RICH., in Mem. Soc. Hist. Nat. Paris V. p. 248 (1834)

Stylocoryne rigida, WIGHT, Ic. Ind. Or. t. 1064 (1846)

Chomelia corymbosa, K. SCHUMM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 74 (1891); MAK. et NEM., Fl. Jap. ed. 2. p. 1106 (1931)

Tarenna kotoensis, MASAMUNE, in Trans. Nat. Hist. Soc. Formos. XX. p. 462 (1932)

Nom. Jap. *Gyokusinkwa*

Leg. Ipse, Kosugidani, Jul. 26, 1927.

Distr. Kyûsyû, Tanegasima, Amami-Oshima, Okinawa, Taiwan.

Note. This shrub is found in the laurisilvae at low altitudes.

Gardenia, ELLIS, in Philos. Trans. LI. 2. p. 935 (1761); DC., Prodr. IV. p. 379 (1830); ENDL., Gen. Pl. n. 3305 (1836-40); BENTH. et HOOK. f., Gen. Pl. II. p. 89 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 76 (1891); LEMÉE, Dict. Gen. Pl. Phan. III. p. 197 (1931)

Syn. *Gardenia*, ADANS., Fam. II. p. 20 (1763)

Caquepiria, J. F. GMEL., Syst. II. p. 651 (1791)

Berghias, JUSS., in Mém. Mus. Paris. VI. p. 399 (1820)

Sulipa, BLANCO, Fl. Filip. p. 497 (1837)

Gardenia longisepala, MASAMUNE, sp. nov.

Syn. *Gardenia angusta*, MERR. var. *grandiflora*, MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929)

Gardenia angusta, var. *longisepala*, MASAM., in Journ. Trop. IV. p. 195 (1932)

Nom. Jap. *Yabusima-kutinasii*

Leg. Ipse, Jun. 6, 1928.

Distr. Endemica.

Note. It is found in the laurisilvae or in the lauri-aciculisilvae.

Diplospora, DC., Prodr. IV. p. 477 (1830); LEMÉE,

Dict. Gen. Pl. Phan. II. p. 664 (1930)

Syn. *DiplospERMUM*, DALZ., in Hook. Kew Journ. Sci. II. p. 257 (1850)

Tricalysia A. RICH.; BENTH. et HOOK. f., Gen. Pl. II. p. 95 (1873) p.p.

Tricalysia, Sect. *Diplospora*, K. SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 82 (1891)

Diplospora viridiflora, DC., Prodr. IV. p. 477 (1830); BENTH., Fl. Hongk. p. 157 (1861); MAXIM., in Mém. Biolog. XII. p. 486 (1886); FORB. et HEMSL., Ind. Fl. Sin. I. p. 383 (1888); HENRY, List Pl. Formos. p. 50 (1896); MATSUM., in Tokyo Bot. Mag. XV. p. 13 (1901); MATSUM. et HAY., Enum. Pl. Formos. p. 192 (1906); HAY., Ic. Pl. Formos. II. p. 95 (1912), et V. p. 79 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 1110 (1930)

Syn. *Tricalysia viridiflora*, MATSUM., Ind. Pl. Jap. II. 2. p. 596 (1912)

Nom. Jap. *Sinomimizu*

Leg. NAITO! 1932.

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China.

Note. The species has its northern limit of habitat in Tanegasima and any species of this genus is not yet reported in lands further north than Tanegasima.

Psychotria, LINN., Syst. ed. 10, p. 929 (1759);

DC., Prodr. IV. p. 504 (1830); ENDL., Gen. Pl. n. 3147 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 123 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 112 (1891)

Syn. *Polyozus*, BL., Bijdr. p. 947 (1826)

Psychotria Reevesii, WALL., in ROXB. in Fl. Ind. ed. CAR. II. p. 104 (1824); PITARD., in LECOMTE, Fl. Ind. Chin. III. 3. p. 361 (1924); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 556 (1927); MERR., Enum. Hainan Pl. p. 176 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 121 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1126 (1931)

Syn. *Grumilea Reevesii*, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 193 (1841)

Psychotria elliptica, (non KER.) BENTH., Fl. Hongk. p. 161 (1861); MAXIM., in Bull. Acad. Imp. St. Pet. XXIX. p. 172 (1883), et in Mém. Biolog. XI. p. 797 (1883); ENGL. et MAXIM., in Engl. Bot. Jahrb. VI. p. 67 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 387 (1888); MATSUM. et HAY., Enum. Pl. Formos. p. 194 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 594 (1912); HAY., Ic. Pl. Formos. II. p. 97 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 133 (1912)

Nom. Jap. *Ryūkyū-aoki*

Leg. Ipse, Onoaida, Sept. 5, 1926.

Distr. Kyūsyū, Amami-Ōsima, Okinawa, Taiwan, Bonins, China.

Note. The species is found as undergrowth in the laurisilvae.

Psychotria serpens, LINN., Mant. Pl. II. p. 204 (1771); DC., Prodr. IV. p. 519 (1830); BENTH., Fl. Hongk. p. 161 (1861); MAXIM., in Mém. Biolog. XI. p. 796 (1883);

ENGL. u. MAXIM., in Engl. Bot. Jahrb. VI. p. 67 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 387 (1888); HENRY, List Pl. Formos. p. 50 (1896); MATSUM., in Tokyo Bot. Mag. XV. p. 16 (1901), et Ind. Pl. Jap. II. 2. p. 594 (1912); MATSUM. et HAY., Enum. Pl. Formos. p. 195 (1906); HATTORI, Pfl.-Geogr. Bonn. p. 36 (1908); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 133 (1912); PITARD, in LECOMTE Fl. Ind. Chin. III. 3, p. 352 (1924); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 558 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1126 (1931)

Syn. *Psychotria scandens*, HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 193 (1836)

Nom. Jap. *Siratama-kazura*

Leg. Ipse, Jul. 14, 1922.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, China.

Note. The species grows as an epiphyte from the sea level up to about 700 m.

Mephitidia, REINW., ex BL. Cat. Gew. Buitenzorg. p. 51 (1823), et Bijdr. p. 995 (1826); DC., Prodr. IV. p. 452 (1830); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 523 (1927)

Syn. *Lasianthus*, JACK., in Trans. Linn. Soc. XIV. p. 125 (1823); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 129 (1873); SCHUMN., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 120 (1891); LEMÉE, Dict. Gen. Pl. Phan. III. p. 955 (1931)
Octavia, DC., Prodr. IV. p. 464 (1830)

Nonatelia, O. KUNTZE, Rev. Gen. Pl. I. p. 289 (1891)

Mephitidia japonica, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. p. 391 (1922), et ed. 2. I. p. 524 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929)

Syn. *Lasianthus japonicus*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 110 (1867); MAXIM., in Mém. Biolog. XI. p. 798 (1883); DIELS, Fl. Cent. Chin. p. 582 (1900); MATSUM. et HAY., Enum. Pl. Formos. p. 197 (1906); MATSUM., Ind. Pl. Jap. II. 2. p. 590 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1117 (1931)

Nom. Jap. *Ruriminoki*

Leg. Ipse, Miyannoura, Aug. 5, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China.

Note. Grows as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

Mephitidia satsumensis, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 1. p. 392 (1922), et ed. 2. I. p. 526 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929)

Syn. *Lasianthus satsumensis*, MATSUM., in Tokyo Bot. Mag. XV. p. 37 (1901) et Ind. Pl. Jap. II. 2. p. 590 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1118 (1931)

Nom. Jap. *Satsuma-ruriminoki*

Leg. Ipse, Jul. 12, 1928.

Distr. Kyûsyû.

Note. The species is a small shrub and grows as undergrowth in the laurisilvae. It has its southern limit in this island.

Mephitidia, sp.

Nom. Jap. *Yakusimaruriminoki*

Leg. NAOHARA! Onoaida,

Note. This unknown species is related to *Mephitidia japonica*, but it has cordate leaves.

Paederia, LINN., Mant. I. pp. 7 et 52 (1767); DC., Prodr. IV. p. 471 (1830); ENDL., Gen. Pl. n. 3180 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 133 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 125 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 994 (1932)

Syn. *Hondbessen*, ADANS., Fam. II. p. 158 (1763)

Hondbesseion, O. KUNTZE, Rev. Gen. Pl. I. p. 285 (1891)

Paederia chinensis, HANCE, in Journ. Bot. VII. p. 228 (1878); FR., Pl. David. I. p. 155 (1884); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 531 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1124 (1931)

Syn. *Paederia foetida*, (non LINN.) THUNB., in Nov. Reg. Soc. Sc. Upsal. IV. p. 32 (1783); MERR., Enum. Philipp. Pl. III. p. 570 (1923)

Paederia tomentosa, (non BL.) MAXIM., in Bull. Acad. Imp. Sc. St. Pet. XXIX. p. 173 (1883), et in Mém. Biolog. XI. p. 798 (1883); MATSUM. et HAY., Enum. Pl. Formos. p. 197 (1906); HAY., Fl. Mont. Formos. p. 115 (1908); NAK., Fl. Kor. I. p. 292 (1909); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 134 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 593 (1912)

Paederia Wilsonii, HESSE, in Mittheilung. Deutsch. Pend. Gesslls. XXII. p. 268 (1913)

Nom. Jap. *Hekuso-kazura*

Leg. Ipse, Onoaida Sept. 5, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. Occurs in waste lands of lowlands.

Mitchella, [LINN., Nov. Pl. Gen. p. 24 (1751)] et Amoen. Acad. III. p. 16 (1756); DC., Prodr. IV. p. 452 (1830); ENDL., Gen. Pl. n. 3188 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 137 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 133 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 498 (1932)

Syn. *Chamaedaphne*, MITCHELL, in Act. Nat. Cur. VIII. App. p. 222 (1784)

Disperma, J. F. GMEL., Syst. II. p. 892 (1791)

Mitchella undulata, SIEB. et ZUCC. var. *minor*, MASAMUNE, var. nov.

Folia 2-3 mm longa, 1.5 mm lata. Flores saepe rosei.

Syn. *Mitchella repens*, LINN. var. *undulata* (non MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929); SUZUKI, in Ann. Rep. Bot. Gard. Taihok. Imp. Univ. I. p. 176 (1931)

Nom. Jap. *Hime-turu-aridôsi*

Leg. Ipse, Jun. 6, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, (Sp.); Taiwan (var.)

Note. The variety is found in the lauri-aciculisilvae and in the Pseudosasa Owatarii Association, and it is confined to this island and Formosa.

Damnacanthus, GAERTN., Fuct. III. p. 18, t. 182 f. 7 (1805); DC., Prodr. IV. p. 473 (1830); ENDL., Gen. Pl. n. 3178 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 118 (1873); SCHUM., in ENGL. u.

PRANT. Nat. Pfl.-fam. IV. iv. p. 137 (1891); LEMÉE, Dict. Gen. Pl. Phan. II. p. 496 (1930)

Syn. *Baumannia*, DC., in Mem. Soc. Phys. Gen. IV. p. 583 (1833)

Damnacanthus indicus, GAERTN. var. **genuinus**, MAK., in Tokyo Bot. Mag. XI. p. 279 (1897), et XVIII. p. 31 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 585 (1912); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 540 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1108 (1931)

Syn. *Carissa spinarum*, (non LINN.), THUNB., Fl. Jap. p. 103 (1784)

Damnacanthus indicus, GAERTN.; SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 176 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 110 (1867); FR. et SAV., Enum. Pl. Jap. I. p. 210 (1875); MAXIM., in Mém. Biolog. XI. p. 795 (1883); MORI, Enum. Pl. Cor. p. 322 (1922)

Nom. Jap. *Aridōsi*

Leg. Ipse, Jun. 14, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Korea, China, India.

Note. The plant grows as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

var. **microphyllus**, MAK., in Tokyo Bot. Mag. VI. p. (55) (1892, et X. p. 279 (1896); NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 542, f. 245 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929)

Syn. *Baumannia geminiflora*, A. P. DC., Not. Pl. Rar. IV. p. 1. t. 25 (1833)

Damnacanthus indicus, α **genuinus**, f. **microphyllus**, MAK., in Tokyo Bot. Mag. XVIII. p. 31 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 585 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1108 (1931)

Nom. Jap. *Hime-aridōsi*

Leg. Ipse, Kosugidani, Jun. 11, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Amami-Ōsima.

Note. Grows as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

Morinda, [LINN., Gen. Pl. ed. 1. p. 57 (1737)]

et Sp. Pl. ed. 1. p. 176 (1753); DC., Prodr. IV. p. 446 (1830); ENDL., Gen. Pl. n. 3183 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 117 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 138 (1891); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 564 (1932)

Syn. *Guttenbergia*, ZOLL., in Nat. Gen. Arch. Neder. Ind. II. p. 2 (1846)

Morinda umbellata, LINN., Sp. Pl. ed. 1. p. 176 (1753); DC., Prodr. IV. p. 449 (1830); BENTH., Fl. Hongk. p. 159 (1861); HOOK. f., Fl. Brit. Ind. III. p. 157 (1880); MAXIM., in Mém. Biolog. XI. p. 795 (1883); FORB. et HEMSL., Ind. Fl. Sin. I. p. 386 (1888); MATSUM. et HAY., Enum. Pl. Formos. p. 194 (1906); HATTORI, Pfl.-Geogr. Bonn. p. 36 (1908); MATSUM., Ind. Pl. Jap. II. 2. p. 591 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 133 (1912); RIDLEY, Fl. Malay II. p. 119 (1923); PITARD, in LECOMTE, Fl. Ind. Chin. III. 3. p. 422 (1924); MERR., Enum. Hainan Pl. p. 178 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929); NAK., in Bull. Biogeog. Soc. Jap. I. p. 263 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1119 (1931)

Syn. *Morinda tetrandra*, JACK, in Malayan Miscellan. I. p. 13 (1820)

Morinda scandens, ROXB., Fl. Ind. I. p. 548 (1832)

Nom. Jap. *Hanagasanoki*

Leg. Ipse, Koseda, Mart. 24, 1923.

Distr. Amami-Ōsima, Bonins, Taiwan, China.

Note. The species is found in lowlands in the laurisilvae, and has its northern limit in this island. It is widely distributed in warmer asiatic countries.

Galium, [LINN., Gen. Pl. ed. 1. p. 24 (1737)] et Sp. Pl. ed. 1. p. 10; (1753); DC., Prodr. IV. p. 593 (1830); ENDL., Gen. Pl. n. 3100 (1836-40); HOOK. f., in BENTH., et HOOK. f. Gen. Pl. II. p. 149 (1873); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 149 (1891); LEMÉE, Dict. Gen. Pl. Phan. III. p. 186 (1931)

Syn. *Gallium*, [TOURN., ex LINN. Syst. ed. 1. (1735)]

Cruciata, (TOURN.) ex ADANS., Fam. II. p. 144 (1763)

Galium aparine, LINN., Sp. Pl. ed. 2. p. 157 (1762); DC., Prodr. IV. p. 608 (1830); BENTH., Fl. Hongk. p. 164 (1861), et Fl. Austral. III. p. 447 (1866); HOOK. f., Fl. Brit. Ind. III. p. 205 (1881); FR. et SAV., Enum. Pl. Jap. I. p. 215 (1875); MAXIM., in Mél. Biolog. IX. p. 259 (1873); FORB. et HEMSL., Ind. Fl. Sin. I. p. 393 (1888); DIELS, Fl. Centr. Chin. p. 583 (1901); KOM., Fl. Mansh. III. p. 491 (1907); NAK., Fl. Kor. I. p. 296 (1909); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 135 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 586 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1110 (1931)

Syn. *Galium uliginosum*, THUNB., Fl. Jap. p. 58 (1784)

Galium strigosum, THUNB., in Nov. Act. Ups. VII. p. 141. t. 4 ff. 1-9 (1815); DC., Prodr. IV. p. 611 (1830); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 112 (1847)

Nom. Jap. *Yaemugura*

Leg. Ipse, April. 3, 1927.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ōsima, Korea, Manchuria, China.

Note. Grows in waste lands near the sea level.

Galium gracile, BUNGE, Enum. Pl. in Chin. Bot. p. 35 (1831); WALP., Rep. II. p. 456 (1843); MAXIM., Prim. Fl. Amur. p. 472 (1859), et in Mél. Biolog. IX. p. 261 (1873), et XI. p. 802 (1883); FORB. et HEMSL., Ind. Fl. Sin. I. p. 394 (1888); DIELS, Fl. Cent. Chin. p. 583 (1901); MATSUM., in Tokyo Bot. Mag. XV. p. 39 (1901), et Ind. Pl. Jap. II. 2. p. 587 (1912); MAK., in Tokyo Bot. Mag. XVII. p. 109 (1903); MATSUM. et HAY., Enum. Pl. Formos. p. 200 (1906); NAK., in Tokyo Bot. Mag. XXIII. p. 104 (1909); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 135 (1912); MORI, Enum. Pl. Cor. p. 323 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 120 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1111 (1931)

Syn. *Galium rotundum*, THUNB., Fl. Jap. p. 59 (1784)

Galium trachyspermum, A. GRAY, Pl. Jap. p. 313 (1859); MIQ., in Ann. Mus. Bot. Lugd. Bat. I. p. 112 (1863); FR. et SAV., Enum. Pl. Jap. I. p. 214 (1875)

Galium pogonanthum, FR. et SAV., Enum. Pl. Jap. I. p. 213 (1875), et II. p. 393 (1876)

Galium miltorrhizum, HANCE, in Journ. Bot. p. 113 (1868)

Nom. Jap. *Yotuba-mugura*

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ōsima, Taiwan, Korea, China.

| Names of Plants | Regions | | | | | | | | | | | | | | |
|--|---------------------------------|---------|--------------|---------|------------------------|------------------------|--------|--------|-------|--------------------------------------|--|----|---|---|----|
| | Philippines Bonins Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles Saghalien | Northern Kuriles & Kamtchatka Manchuria, Amur & Ussuri China | | | | |
| <i>Mussaenda parviflora</i> , MIQ. | | + | + | + | | + | | | | | + | | | | |
| <i>Mussaenda sikokiana</i> , MAK. | | | | | | + | + | | | | | | | | |
| <i>Tarenna zeylanica</i> , GAERTN. | | + | + | + | + | + | | | | | | | | | |
| <i>Gardenia longisepala</i> , MASAMUNE | | | | | | | | | | | | | | | |
| <i>Diplospora viridiflora</i> , DC. | | + | + | + | + | | | | | | + | | | | |
| <i>Psychotria Reevesii</i> , WALL. | + | + | + | + | + | + | | | | | + | | | | |
| <i>Psychotria serpens</i> , LINN. | + | + | + | + | + | + | + | | | | + | | | | |
| <i>Mephitidia japonica</i> , NAK. | | + | + | | | + | + | + | | | + | | | | |
| <i>Mephitidia satsumensis</i> , NAK. | | | | | | + | | | | | | | | | |
| <i>Mephitidia</i> sp. | | | | | | | | | | | | | | | |
| <i>Paederia chinensis</i> , HANCE | + | + | + | + | + | + | + | + | + | + | + | | | | |
| <i>Mitchella undulata</i> , SIEB. et ZUCC. var. minor, MASAMUNE (Sp.) | | + | | | | + | + | + | + | | | | | | |
| <i>Damnacanthus indicus</i> , GAERTN. var. genuinus, MAK. | | | + | + | + | + | + | + | + | | + | | | | |
| <i>D. i.</i> var. <i>microphyllus</i> , MAK. | | | | + | | + | + | + | | | | | | | |
| <i>Morinda umbellata</i> , LINN. | + | + | + | + | | | | | | | + | | | | |
| <i>Galium aparine</i> , LINN. | | | | + | | + | + | + | + | + | + | | | | |
| <i>Galium gracile</i> , BUNGE | | + | + | + | + | + | + | + | + | + | + | | | | |
| <i>Galium setuliflorum</i> , MAK. var. setuliflorum, MAK. | | | | | | + | + | + | + | | | | | | |
| <i>Galium yakusimense</i> , MASAMUNE | | | | | | | | | | | | | | | |
| Total | 29 | 4 | 3 | 16 | 16 | 17 | 11 | 20 | 13 | 11 | 8 | 3 | 1 | 1 | 15 |
| Percentage | | 14 | 10 | 55 | 55 | 59 | 38 | 69 | 45 | 38 | 28 | 10 | 3 | 3 | 52 |
| (Southern elements 21) | | | | | (Northern elements 21) | | | | | | | | | | |

With regard to this family, the flora of the island shows a

close relationship with Amami-Ôsima and Kyûsyû, and comparatively less close one with the other floral regions.

Caprifoliaceae*

Caprifoliaceae, VENT., Tabl. II. p. 593 (1799)

Ebulus, GRARCKE, Fl. Nord. u. Mitteldeutsch-

land, ed. 7. p. 184 1865,

Syn. *Sambucus*, Sect. *Ebulus*, SPACH, Hist. Nat. Veg. Phanér. VIII. p. 323 (1839 p.p.; FRITSCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 162 1891 p.p.

Ebulus chinensis, NAK., Tent. Syst. Capr. Jap. p. 13 1921; MAK. et NEM., Fl. Jap. ed. 2. p. 1135 1931)

Syn. *Sambucus canadensis*, non LINN. THUNB., Fl. Jap. p. 126 1784

Sambucus chinensis, LINDL., in Trans. Hort. Soc. Lond. VI. p. 287 1826; DC., Prodr. IV. p. 322 1830; HANCE, in Journ. Bot. VII. p. 295 1869, et XII. p. 260 1874; NAK., in Tokyo Bot. Mag. XXXI. p. 211 1917

Sambucus ebuloideæ, non DESVAUX, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 174 1846

Sambucus Thunbergii, BL., apud MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 265 1866; FR. et SAV., Enum. Pl. Jap. I. p. 198 1875

Sambucus javanicus, non REIWARDT FORB. et HEMSL., Ind. Fl. Sin. I. p. 348 1888; MATSUM., Ind. Pl. Jap. II. 2. p. 602 1912 p.p.; REHD., in SARGENT Pl. Wil. I. 2. p. 307 1912 p.p.

Nom. Jap. *Sokuzu*

Lcg. Ipse, Jul. 6, 1927.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Bonins, Taiwan.

Note. Occurs in the lowlands near dwellings.

Viburnum, [LINN., Syst. ed. 1 1735, et Gen. Pl.

ed. 1. p. 86 1737] et Sp. Pl. ed. 1. p. 267 1753; DC., Prodr. IV. p. 323 1830; ENDL., Gen. Pl. n. 3340 1836-40; HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 3 1873; FRITSCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 163 1891; NAK., Tent. Syst. Capr. Jap. p. 14 1921)

Viburnum Awabucki, K. KOCH, in Wochenschr. Gart. Pfl. X. p. 108 1867; NAK., Tent. Syst. Capr. Jap. p. 21 1921, et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 589 (1927; MORI, Enum. Pl. Cor. p. 331 1922; MASAMUNE, Prel. Rep. Veg. Yak. p. 122 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1144 1931)

Syn. *Viburnum odoratissimum*, (non KER.) SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 173 (1846; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 268 1866; FR. et SAV., Enum. Pl. Jap. I. p. 201 (1875); MAXIM., in Mém. Biolog. X. p. 649 (1880); SHIRASAWA, Ic. For. Tree. Jap. I. p. 234 t. 88, ff. 1-9 1911 p.p.; SCHNEIDER, Illust. Handb. Laubholz. II. p. 667 (1912) p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 603 (1912) p.p.

* In arranging the genera of this family I mainly followed the system given by Dr. T. NAKAI in his work "Tentamen Systematis Caprifoliacearum Japonicarum (1921)."

Viburnum odoratissimum, var. *Awabucki*, ZABEL, in Ruempler, Ill. Gartenbau-Lexicon ed. 3. p. 77 (1902)

Nom. Jap. *Sangozyu*

Leg. Ipse, Jul. 14, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. As a member of the laurisilvae or the lauri-aciculisilvae this plant is one of the components of the forests.

Viburnum erosum, THUNB., Fl. Jap. I. p. 124 (1784); DC., Prodr. IV. p. 327 (1830); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 171 (1846); FR. et SAV., Enum. Pl. Jap. I. p. 200 (1875), et II. p. 308 (1876); MAXIM., in M  l. Biolog. X. p. 669 (1880); FORB. et HEMSLE., Ind. Fl. Sin. I. p. 351 (1888) p.p.; NAK., Fl. Kor. I. p. 287 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 603 (1912); SCHNEID., Handb. Laubholz. II. p. 650 f. 417. h-k. (1912)

Syn. *Viburnum erosum*, THUNB. var. *punctatum*, FR. et SAV., Enum. Pl. Jap. II. p. 380 (1876); NAK., Tent. Syst. Capr. Jap. p. 39 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 608 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1146 (1931)

Viburnum erosum, THUNB. var. *furcipila*, FR. et SAV., Enum. Pl. Jap. II. pt. 1. p. 380 (1876)

Nom. Jap. *Kobano-gamazumi*

Leg. Ipse, Jun. 17, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, China.

Note. The species is found in the laurisilvae.

Viburnum furcatum, BL., ex MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 265 (1866); MAXIM., in M  l. Biolog. X. p. 657 (1880); MATSUM., Ind. Pl. Jap. II. 2. p. 603 (1912); NAK., Tent. Syst. Capr. Jap. p. 25 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 592 (1927); MORI, Enum. Pl. Cor. p. 331 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 123 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1147 (1931)

Syn. *Viburnum plicatum*, (non MICHAUX) A. GRAY, in Narr. Capt. Perry Exped. p. 313 (1856)

Viburnum dilatatum, var. *radiata*, A. GRAY, in Memoire of Am. Acad. Art. & Sc. New. Ser. VI. p. 393 (1859)

Viburnum lantanoides, (non MICHAUX) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 265 (1866)

Nom. Jap. *Musikari*

Leg. Ipse, Aikodake, Jun. 17, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. The plant grows as an epiphyte or as a terrestrial plant in the lauri-aciculisilvae from 1000 m up to 1800 m.

Viburnum japonicum, SPRENGL., Syst. Veg. I. p. 934 (1825); MAXIM., in M  l. Biolog. X. p. 657 (1880); MATSUM., Ind. Pl. Jap. II. 2. p. 603 (1912); SCHNEIDER, Ill. Handb. Laubholz. II. p. 643, f. c-d. (1912) p.p.; NAK., Tent. Syst. Capr. Jap. p. 30 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 600 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 123 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1147 (1931)

Syn. *Cornus japonica*, THUNB., Fl. Jap. I. p. 63 (1784); ROEM. et SCHULT., Syst. Veg. III. p. 320 (1818)

Viburnum Buergeri, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 268 (1866);
FR. et SAV., Enum. Pl. Jap. I. p. 201 (1875); KOCH, Dendr. II. 1. p. 56
(1872)

Nom. Jap. *Hakusanboku*

Leg. Ipse, Tabugawa, Jul. 21, 1928.

Distr. Honsyû, Kyûsyû.

Note. Grows on forest edges of the laurisilvae.

Viburnum urceolatum, SIEB. et ZUCC. form. *bravifolia*, MAK., in Tokyo Bot. Mag.
XXIV. p. 21 (1910); MASAMUNE, Prel. Rep. Veg. Yak. p. 123 (1929); MAK. et
NEM., Fl. Jap. ed. 2. p. 1150 (1931)

Syn. *Viburnum urceolatum*, SIEB. et ZUCC. var. *brevifolium*, NAK., in NAK. et KOIDZ.
Tree. & Shrub. Jap. ed. 2. I. p. 584 (1927)

Nom. Jap. *Yamasigure*

Leg. Ipse, Hananoegô, Jul. 3, 1928.

Distr. Endemica.

Note. This plant grows as an epiphyte or as a terrestrial plant in the lauri-aciculi-
silvae from 600 m up to 1700 m above the sea level. The form is restricted to this
island and as species it has its southern limit in this island.

Abelia, R. BR., in Abel. Narr. Journ. Chin. App.

B. p. 376 cum. Ic. (1818); DC., Prodr. IV. p. 339 (1830); ENDL., Gen. Pl. p. 566
n. 3333 1836-40; BENTH. et HOOK. f., Gen. Pl. II. p. 4 (1873); NAK., Tent. Syst.
Capr. Jap. p. 52 (1921)

Syn. *Vaselia*, MARTENS et GALTOLLI, in Bull. Acad. Sci. Brunell. XI. p. 242 (1844)

Linnaea, Subg. *Abelia*, FRITSCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p.
166 (1891)

Linnaea, Subgn. *Abelia*, GRAEBNER, in Engl. Bot. Jahrb. XXIX. p. 125 (1901)

Abelia serrata, SIEB. et ZUCC., Fl. Jap. I. p. 76, t. 34 (1836); MIQ., in Ann. Mus. Bot.
Lugd. Bat. II. p. 268 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 205 (1875);
REHDER, in SARGENT, Pl. Wils. I. p. 125 (1911); SCHNEID., Ill. Handb. Laubholz.
II. p. 678 (1912); NAK., Tent. Syst. Capr. Jap. I. p. 56 (1921), et in NAK. et
KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 621, t. 278 (1927); MASAMUNE, Prel. Rep.
Veg. Yak. p. 122 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1132 (1931)

Syn. *Abelia spathulata*, (non SIEB. et ZUCC.) MIQ., in Ann. Mus. Bot. Lugd. Bat.
II. p. 269 (1866) p.p.

Linnaea serrata, GRAEBNER, in Engl. Bot. Jahrb. XXIX. p. 133 (1900); MAK.,
in Tokyo Bot. Mag. XV. p. 4 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 598
(1912)

Nom. Jap. *Kotukubane-utugi*

Leg. Ipse, Tatyûdake, Jul. 22, 1927.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The shrub is found in dry spots from 700 m up to 1500 m above the sea
level, and is not yet reported further south than this island.

var. *congesta*, NAK., in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. p. 623, f. 279, E
(1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929)

Nom. Jap. *Edauti-kotukubaneutugi*

Leg. Ipse, Tatyûdake, Jul. 27, 1922.

Distr. Kyûsyû.

Note. The variety is often found on sunny and rocky ground from about 1500 m up to 1800 m.

Lonicera, [LINN., Gen. Pl. ed. 1. p. 57 (1737.) et Sp. Pl. ed. 1. p. 173 (1753) p.p.; DC., Prodr. IV. p. 330 (1830) p.p.; ENDL., Gen. Pl. p. 568, n. 3337 (1836-40) p.p.; HOOK. f., in BENTH. et HOOK. f. Gen. Pl. II. p. 5 (1873); FRISTCH, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 166 (1891) p.p.; NAK., Tent. Syst. Caprif. Jap. p. 61 (1921); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 151 (1932) p.p.]

Syn. *Caprifolium*, [TOURN., ex LINN. Syst. ed. 1 (1735)] ADANS., Fam. II. p. 157 (1763)

Isika, ADANS., Fam. II. p. 501 (1763)

Chamerasia, RAFIN., Ann. Gén. Sc. Phys. VI. p. 83 (1820)

Nintooa, SWEET, Hort. Brit. ed. 2. p. 258 (1830)

Lonicera affinis, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 264 (1841); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 270 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 204 (1875), et II. p. 652 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 359 (1888); MAXIM., in Mém. Biolog. X. p. 58 (1877); REHDER, Syn. Lon. p. 157 1903, et in SARGENT, Pl. Wils. I. 1. p. 144 (1911); NAK., Tent. Syst. Capr. Jap. p. 70 1921, et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 636 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1136 1931

Syn. *Lonicera Buergeriana*, BL., in Herb. ex K. KOCH Dendr. II. p. 18 1872

Lonicera affinis, var. *hypoleuca*, (non REHDER) MATSUM., Ind. Pl. Jap. II. 2. p. 599 (1912)

Nom. Jap. *Hama-nindô*

Leg. Ipse, Ambô, Aug. 31, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. Found in littoral forest and in lowlands.

Lonicera hypoglauca, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 270 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 204 (1875), et II. p. 387 (1876); NAK., Tent. Syst. Capr. Jap. p. 71 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 638 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1139 (1931)

Syn. *Lonicera Leschenaultii*, (non WALL.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 270 (1866)

Lonicera affinis, var. *pubescens*, MAXIM., in Bull. Acad. St. Petersb. XXIV. p. 24 (1877); FORB. et HEMSL., Ind. Fl. Sin. I. p. 359 (1888); MATSUM., Ind. Pl. Jap. II. 2. p. 599 (1912)

Caprifolium hypoglaucum, O. KUNTZE, Rev. Gen. Pl. I. p. 274 (1891)

Lonicera affinis, var. *hypoglauca*, REHD., Synop. Gen. Lon. p. 158 (1903)

Lonicera rubropunctata, HAY., Ic. Pl. Formos. IX. p. 48 (1920)

Nom. Jap. *Kidati-nindô*

Leg. Ipse, Jul. 29, 1924.

Distr. Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China.

Note. Grows in the laurisilvae.

Lonicera japonica, THUNB., Fl. Jap. p. 89 (1784); EDWARD., in Bot. Reg. t. 70 (1815); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 269 (1866); FR. et SAV., Enum. Pl.

Jap. I. p. 203 (1875); MAXIM., in Mél. Biolog. X. p. 56 (1877); FORB. et HEMSL., Ind. Fl. Sin. I. p. 364 (1888); DIPPEL, Handb. Laub. I. p. 215 f. 137 (1889); DIELS, Fl. Cent. Chin. in Engl. Bot. Jahrb. XXIX. p. 594 (1901); NAK., Fl. Kor. I. p. 288 (1909), Tent. Syst. Caprif. Jap. p. 67 (1921), et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 633 (1927); MATSUM., Ind. Pl. Jap. II. 2. p. 600 (1912); DANGAY, in Lecomte, Fl. Ind. Chin. III. p. 19 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 122 (1929); YAMAZUTA, List Manch. Pl. p. 253 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1139 (1931)

Syn. *Lonicera nigra*, (non LINN.) THUNB., Fl. Jap. p. 89 (1784)

Lonicera flexuosa, THUNB., in Trans. Linn. Soc. II. p. 330 (1794); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 270 (1866); DIPPEL, Hand. Laubh. I. p. 217 (1889)

Caprifolium japonicum, DUMORT, de Courset le Bot. Cult. ed. 2 VII. p. 20a. (1814); O. KUNTZE, Rev. Gen. Pl. I. p. 274 (1891)

Lonicera chinensis, WATSEN, Dendrologia Britannicus, p. 70 (1830; DC., Prodr. IV. p. 333 1830; HOOK., Bot. Mag. t. 3316 (1834; KOCH, Dendr. II. p. 17 (1872)

Nintooa japonica, SWEET, Hort. Brit. ed. 2. p. 258 1830

Lonicera confusa, 'non DC.' MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 269 (1866)

Lonicera acuminata, var. *japonica*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 270 (1866)

Lonicera flexuosa, var. *Halleana*, DIPPEL, Handb. Laubh. I. p. 217 (1889)

Caprifolium japonicum, var. *subverticillare*, O. KUNTZE, Rev. Gen. Pl. I. p. 273 1891

Nom. Jap. *Suikazura*

Leg. Ipse, Jul. 18, 1928.

Distr. Yezo, Honsyû, Sikoku, Tanazasima, Amami-Ôsima, Taiwan variety Korea, Manchuria, China.

Diervilla, [TOURN., ex LINN. Syst. ed. 1. et Gen.

Pl. ed. 1. p. 53 (1737) ADANS., Fam. II. p. 157 (1763; JUSS., Gen. Pl. p. 211 1789; ENDL., Gen. Pl. n. 3336 (1836-40; FRIT., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. iv. p. 169 1831; NAK., Tent. Syst. Capr. Jap. p. 108 (1921; LEMÉE, Dict. Gen. Pl. Phan. II. p. 616 1930

Syn. *Lonicera*, LINN., Sp. Pl. p. 173 (1753) p.p.

Weigela, THUNB., in Act. Stockh. p. 137, t. 5 (1780, et Fl. Jap. p. 6, t. 16 (1784)

Weigelia, PERSOON, Syn. Pl. I. p. 176 (1805)

Diervilla decora, NAK., in Tent. Syst. Capr. Jap. p. 117 (1921, et in NAK. et KOIDZ. Tree. & Shrub. Jap. ed. 2. I. p. 699 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 1134 (1931)

Syn. *Weigela amabilis*, non CARR.) HOOK., in Bot. Mag. t. 4893 (1856)

Diervilla versicolor, (non SIEB. et ZUCC.) FR. et SAV., Enum. Pl. Jap. I. p. 202 (1875)

Diervilla floribunda, var. *versicolor*, REHDER, in BAILLY Cycl. Am. Hort. I. p. 484 (1900; MAK., in Tokyo Bot. Mag. XXII. p. 198 (1908); MATSUM., Ind. Pl. Jap. II. 2. p. 597 (1912); SCHNEID., Ill. Handb. Laubh. II. p. 85 (1912)

Nom. Jap. *Nisiki-utugi*

Leg. Ipse, Jun. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is found in the *Pseudosasa Owatarii* Association at about 1800 m above the sea level.

| Names of Plants | Regions | | | | | | | | | | | | | |
|---|-------------|--------|--------|--------|-------------|------------------------|------------|--------------|--------|--------|--------|-------|-------------------------|------------------------------|
| | Philippines | Bonins | Taiwan | Oknawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien |
| | | | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | | | China |
| <i>Ebulus chinensis</i> , NAK. | | | | + | | + | + | + | + | + | + | | + | |
| <i>Viburnum Awabucki</i> , K. KOCH | | | | + | + | + | + | + | + | + | + | | | |
| <i>Viburnum erosum</i> , THUNB. | | | | | | | + | + | + | + | + | | | + |
| <i>Viburnum furcatum</i> , BL. | | | | | | | | + | + | + | + | + | + | + |
| <i>Viburnum japonicum</i> , SPRENGL. | | | | | | | + | + | + | + | | | | |
| <i>Viburnum urceolatum</i> , SIEB. & ZUCC. | | | | | | | | | | | | | | |
| <i>f. brevifolia</i> , MAK. | | | | | | | | | | | | | | |
| <i>Abelia serrata</i> , SIEB. et ZUCC. | | | | | | | | + | + | + | | | | |
| <i>A. s. var. congesta</i> , NAK. | | | | | | | | + | | | | | | |
| <i>Lonicera affinis</i> , HOOK. et ARN. | | + | + | + | + | + | + | + | + | + | | | | + |
| <i>Lonicera hypoglauca</i> , MIQ. | | + | + | + | | | | + | + | | | | | + |
| <i>Lonicera japonica</i> , THUNB. | | | | | | | + | + | + | + | + | + | | + |
| <i>Diervilla decora</i> , NAK. | | | | | | | | + | + | + | | | | |
| Total 12 | 2 | 3 | 4 | 6 | 11 | 10 | 9 | 4 | 3 | 1 | | | | 1 6 |
| Percentage | 17 | 25 | 33 | 50 | 92 | 83 | 75 | 33 | 25 | 8 | | | | 8 50 |
| (Southern elements 4) | | | | | | (Northern elements 11) | | | | | | | | |

The distribution of the plants of *Caprifoliaceae* of this island denotes that this island is closely related to the northern floral region in respect of this family.

Valerianaceae

Valerianaceae, DUMORT, Anal. Fam. p. 32 (1829)

Gen. Pl. n. 5140 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 821 (1867); MUELLER et PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 31 (1889)

Syn. *Anguina*, [MICH., ex LINN. Syst. ed. 1 (1735')] O. KUNTZE, Rev. Gen. I. p. 254 (1891)

Trichosanthes japonica, REGEL, Ind. Sem. Hort. Petrop. p. 90 (1868; MAXIM., in Gartenfl. p. 35, t. 714 (1872); FR. et SAV., Enum. Pl. Jap. I. p. 172 (1875); COGN., in DC. Monogr. Phan. III. p. 371 (1881); ITO et MATSUM., Tent. Fl. Lutch. I. p. 236 (1899); MATSUM., Ind. Pl. Jap. II. 2. p. 612 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 111 (1912); MORI, Enum. Pl. Cor. p. 336 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 123 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1164 (1931)

Syn. *Trichosanthes cucumerina*, (non LINN.) THUNB., Fl. Jap. p. 322 (1784)

Gynopetalum japonicum, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 82 (1865)

Nom. Jap. *Kikarasuuri*

Leg. Ipse, Jul. 13, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, China.

Note. This climbing plant is found in the low lands along forest edges.

Trichosanthes multiloba, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 82 (1865; FR. et SAV., Enum. Pl. Jap. I. p. 173 (1875; COGN., in DC. Monogr. Phan. III. p. 372 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 314 (1887); MATSUM., Ind. Pl. Jap. II. 2. p. 612 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 124 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1165 (1931)

Nom. Jap. *Momizi-karasu-uri*

Leg. Ipse, Aug. 5, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, China.

Note. The species is widely distributed in South Japan. In the island it occurs in the lowlands.

Trichosanthes shikokiana, MAK., in Tokyo Bot. Mag. VI. p. 54 (1892; MASAMUNE, Prel. Rep. Veg. Yak. p. 124 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1165 (1931)

Nom. Jap. *Ô-karasu-uri*

Leg. Ipse, Aug. 5, 1927.

Distr. Sikoku, Kyûsyû, Amami-Ôsima.

Note. The species is found in the lowland and on the edges of shrine groves and has its southern limit in Amami-Ôsima.

Gynostemma, BL., Bijdr. p. 23 (1825); ENDL., Gen.

Pl. n. 4696 (1836-40); HOOK. f., in BENTH. et HOOK. f. Gen. Pl. I. p. 839 (1867); MUELL. et PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 37 (1889); LEMÉE, Dict. Gen. Pl. Phan. III. p. 400 (1931)

Gynostemma pentaphyllum, MAK., in Tokyo Bot. Mag. XVI. p. 179 (1902); MASAMUNE, Prel. Rep. Veg. Yak. p. 123 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1160 (1931)

Syn. *Vitis pentaphylla*, THUNB., Fl. Jap. p. 105 (1784); SPRENG., Syst. Veg. I. p. 778 (1825); PLANCH., in DC. Monogr. Phan. V. 2. p. 627 (1887)

Cissus pentaphylla, WILLD., Sp. Pl. I. p. 659 (1797); DC., Prodr. I. p. 627 (1824)

Gynostemma pedata, BL., Bijdr. p. 23 (1825); SPRENG., Syst. Veg. IV. 2. p. 251 (1827); BENTH. et HOOK. f., Gen. Pl. I. p. 839 (1867); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. II. p. 633 *excl. syn.* (1879); COGN., in DC. Monogr.

Syn. Flossrkea, SPRENG., Anleit. ed. 2. II. p. 523 (1818)

Adenophora verticillata, FISCH., in Mém. Soc. Nat. Mosc. VI. p. 167 (1823); DC., Monogr. Camp. p. 356 (1830); DC., Prodr. VII. p. 492 (1839); FR. et SAV., Enum. Pl. Jap. II. p. 422 (1876); FORB. et HEMSL., Ind. Fl. Sin. II. p. 14 (1889); KOM., Fl. Mansh. III. p. 566 (1907); NAK., Fl. Kor. II. p. 65 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 613 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 153 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 124 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1169 (1931)

Syn. Campanula verticillata, PALL., Reise Russ. III. 2. t. G (1776), et in Voyages. IV. t. 34 (1793)

Campanula tetrphylla, THUNB., Fl. Jap. p. 87 (1784)

Adenophora verticillata, var. *typica*, REGEL, Tent. Fl. Ussur. p. 108 (1861)

Adenophora verticillata, FISCH. f. *genuina*, MAK., in Tokyo Bot. Mag. XII. p. 59 (1893); MATSUM., Ind. Pl. Jap. II. 2. p. 614 (1912)

Nom. Jap. Turiganeninzin

Leg. Ipse, Aug. 19, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, Manchuria, China, Ussuri.

Note. Grows on waste lands, especially on conglomerate soil.

Peracarpa, HOOK. f. et THOMS., in Journ. Linn. Soc. II. p. 26 (1858); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 558 (1876); SCHOENLAND, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 53 (1889)

Syn. Perocarpus, POST et O. KUNTZE, Lexic. Gen. Phan. p. 426 (1903)

Peracarpa carnosa, HOOK. f. et THOMS. in Journ. Linn. Soc. II. p. 26 (1858); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. III. p. 437 (1881); HAY., Fl. Mont. Formos. p. 147 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 617 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 124 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1173 (1931) p.p.

Syn. Campanula carnosa, WALL., in ROXB. Fl. Ind. II. p. 102 (1832); DC., Prodr. VII. p. 474 (1839)

Campanula circaeoides, (non SCHMIDT.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. pp. 195, [et 204 (1867)]; FR. et SAV., Enum. Pl. Jap. I. p. 278 (1875); FORB. et HEMSL., Ind. Fl. Sin. II. p. 9 (1889)

Nom. Jap. Tukusi-tani-gikyô

Leg. Ipse, Jun. 12, 1928.

Distr. Sikoku, Kyûsyû, Taiwan, China, Himalay.

Note. The species grows as undergrowth along streams or in wet places in the lauri-aciculisilvae, from 800 m up to 1600 m above the sea level.

Wahlenbergia, SCHRAD., Cat. Pl. Hort. Goetting. (1814), et in Comm. Goett. VI. p. 123 (1823); DC., Prodr. VII. p. 424 (1839); ENDL., Gen. Pl. n. 3079 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 555 (1876); SCHOENLAND, in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 58 (1889)

Syn. Campanopsis, R. BR., Prodr. p. 561 (1810); O. KUNTZE, Rev. Gen. Pl. II. p. 378 (1891)

Streleskia, HOOK. f., in Hook. Lond. Journ. Bot. VI. p. 226 (1847)

Wahlenbergia gracilis, SCHRAD., Blumenb. p. 38, in Obs.; DC., Monogr. Camp. p. 142 (1830) p.p., et Prodr. VII. p. 433 (1839) p.p.; FR., Pl. David. I. p. 192 (1894); FORB. et HEMSL., Ind. Fl. Sin. II. p. 4 (1889); MATSUM. et HAY., Enum. Pl.

Note. Grows in wet ground such as near rice fields.

[illegible]

Nom. Jap. *Teriha-kusatobera*

Leg. Ipse, Kurio, Mart. 23, 1923.

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan, Bonins.

Note. This psammophyte grows near the seashore, and has its northern limit in Tanegasima.

As the above table indicates, the island has a close relationship with the southern lands in respect of the plants of *Goodeniaceae*.

Compositae.

Compositae, VAILL., in Acta Acad. Paris. p. 143 (1718)

Adenostemma, FORST., Char. Gen. p. 89, t. 45 (1776¹); ENDL., Gen. Pl. n. 2261 (1836-40); DC., Prodr. V. p. 110 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 239 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 133 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 82 (1929)¹
Syn. *Lavenia*, SWARTZ, Prodr. Veg. Ind. Occ. p. 112 (1788)

Adenostemma lavenia, O. KUNTZE, Rev. Gen. Pl. I. p. 304 (1891¹); MERR., Enum. Philipp. Pl. III. p. 596 (1923¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 125 (1929)

Syn. *Verbesina lavenia*, LINN., Sp. Pl. ed. 1. p. 902 (1753)

Adenostemma viscosum, FORST., Char. Gen. p. 90 (1776¹); DC., Prodr. V. p. 111 (1836); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 181 (1846¹); BENTH., Fl. Hongk. p. 171 (1861¹); FR. et SAV., Enum. Pl. Jap. I. p. 219 (1875¹); HOOK. f., Fl. Brit. Ind. p. 242 (1881¹); FR., Pl. David. I. p. 159 (1884¹); HEMSLE., Voy. Chall. Bot. I. 3. p. 159 (1884¹); FORB. et HEMSLE., Ind. Fl. Sin. I. p. 403 (1888¹); HAY., Comp. Formos. p. 6 (1904¹), et Fl. Mont. Formos. p. 121 (1908¹); MATSUM., Ind. Pl. Jap. II. 2. p. 620 (1912¹); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 139 (1912¹); RIDLEY, Fl. Malay. II. p. 182 f. 84 (1923¹); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 4. p. 499, f. 49 (1924¹); MAK. et NEM., Fl. Jap. ed. 2. p. 1183 (1931¹)

Nom. Jap. *Numa-daikon*

Leg. Ipse, Aug. 11, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China, Philippines.

Note. Grows on wet ground or in open lands from the sea level up to 700 m.

Eupatorium, [TOURN., ex LINN. Syst. ed. 1. (1735), Gen. Pl. ed. 1. p. 247 (1737)] et Sp. Pl. ed. 1. p. 836 (1753); DC., Prodr. V. p. 141 (1836); ENDL., Gen. Pl. n. 2280 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 245 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 138 (1889¹); LEMÉE, Dict. Pl. Phan. III. p. 44 (1931)

Syn. *Tragantes*, WALLR., Sched. Crit. I. p. 456 (1822)

Bustamenta, ALAM., ex DC. Prodr. V. p. 166 (1836)

Eupatorium Fortunei, TURCZ. var. *simplicifolium*, NAK., in Tokyo Bot. Mag. XLI. p. 511 (1927¹); MAK. et NEM., Fl. Jap. ed. 2. p. 1232 (1931)

Syn. *Eupatorium album*, (non LINN.) THUNB., Fl. Jap. p. 308 (1784)

Eupatorium chinense, (non LINN.) THUNB., Fl. Jap. p. 308 (1784) p.p.

Eupatorium Fortunei, TURCZ., in Bull. Soc. Imp. Nat. Mosc. XXIV. p. 150 (1851)

Eupatorium japonicum, (non THUNB.) FR. et SAV., Enum. Pl. Jap. I. p. 219 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 403 (1888) *excl. syn.*; NAK., Fl. Kor. II. p. 5 (1911), et Fl. Sylv. Kor. XIV. p. 111 (1923); MATSUM., Ind. Pl. Jap. II. 2. p. 647 (1912)

Eupatorium japonicum, var. *tripartitum*, MAK., in Tokyo Bot. Mag. XXIII. p. 142 (1909)

Nom. Jap. *Hiyodoribana*

Leg. Ipse, Aug. 8, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea, China.

Note. The species is found on wet and open ground in the laurisilvae or in the lauri-aciculisilvae.

Eupatorium Lindleyanum, DC., Prodr. V. p. 180 (1836); BENTH., Fl. Hongk. p. 172 (1861); FORB. et HEMSL., Ind. Fl. Sin. I. p. 404 (1888); DIELS, Fl. Centr. Chin. p. 608 (1901); HAY., Comp. Formos. p. 9 (1904); MATSUM., in Tokyo Bot. Mag. XXI. p. (192) (1907), et Ind. Pl. Jap. II. 2. p. 647 (1912); NAK., Fl. Kor. II. p. 5 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 139 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 188 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1233 (1931)

Syn. *Eupatorium album*, THUNB., Fl. Jap. p. 308 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 167 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 220 (1875)

Eupatorium chinense, DC., Prodr. V. p. 179 (1836); FR. et SAV., Enum. Pl. Jap. I. p. 220 (1875); KOM., Fl. Mansh. III. p. 582 (1907)

Nom. Jap. *Sawa-hiyodori*

Leg. Ipse, Jul. 26, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Grows on wet open ground in the laurisilvae or in the lauri-aciculisilvae.

Eupatorium luchuense, NAK., in Tokyo Bot. Mag. XXX. p. 147 (1916); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1233 (1931)

Syn. *Eupatorium japonicum*, (non THUNB.) FORB. et HEMSL., Ind. Fl. Sin. I. p. 403 (1888) p.p.; HAY., Comp. Formos. p. 8 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 202 (1906)

Eupatorium Reevesii, (non WALL.) FORB. et HEMSL., Ind. Fl. Sin. I. p. 405 (1888) partim; HAY., Comp. Formos. p. 8 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 203 (1906)

Nom. Jap. *Sima-huzibakama*

Leg. Ipse, Aug. 8, 1924.

Distr. Amami-Ôsima, Okinawa, Taiwan.

Note. The species is found on open ground in the laurisilvae and has its northern limit in this island.

Eupatorium variabile, MAK., in Tokyo Bot. Mag. XXIV. p. 59 (1910); MATSUM., Ind. Pl. Jap. II. 2. p. 648 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1233 (1931)

Nom. Jap. *Yama-hiyodori*

Leg. Ipse, April. 1, 1924.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima.

Note. The species is found as undergrowth on wet ground in the laurisilvae.

Solidago, [VAILL., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1 (1737)] et Sp. Pl. ed. 1. p. 878 (1753); ENDL., Gen. Pl. n. 2376 (1836-40); DC., Prodr. V. p. 330 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 256 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 150 (1890)

Syn. *Doria*, ADANS., Fam. II. p. 124 (1763)

Amphirhapis, DC., Prodr. V. p. 343 (1836)

Solidago virgaurea, LINN., Sp. Pl. ed. 1. p. 880 (1753); THUNB., Fl. Jap. p. 317 (1784); DC., Prodr. V. p. 338 (1836); BENTH., Fl. Hongk. p. 179 (1861); FR. et SAV., Enum. Pl. Jap. I. p. 228 (1875); HOOK. f., Fl. Brit. Ind. III. p. 245 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 406 (1888); MIY., Fl. Kuril. p. 240 (1890); HAY., Comp. Formos. p. 10 (1904); KOM., Fl. Mansh. III. p. 583 (1907); NAK., Fl. Kor. II. p. 6 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 667 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 140 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1268 (1931); TATEWAKI, Phytogeogr. Middl. Kuril. pp. 212, 237, 258, 271, et 287 (1932)

Nom. Jap. *Akino-kirinsô*

Leg. Ipse, Aug. 31, 1926.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Grows from the sea level up to 1900 m above; is widely distributed in the temperate zone of both hemispheres.

Solidago yakusimensis, MASAMUNE, nom. nov.

Syn. *Solidago virgaurea*, LINN. var. *minutissima*, MAK., in Tokyo Bot. Mag. XXVIII. p. 179 (1914); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1269 (1931)

Solidago virgaurea, LINN. var. *yakusimensis*, NAK., in Tokyo Bot. Mag. XLII. p. 17 (1928)

Nom. Jap. *Issunkinkwa*

Leg. Ipse, Aug. 31, 1926.

Distr. Endemica.

Note. Grows on marshy ground which is scattered among the Pseudosasa Owattarii Association.

Dichrocephala, L'HERIT, ex DC. in GUILLEMIN, Arch. de Bot. II. p. 517 (1833); DC., Prodr. V. p. 371 (1836); ENDL., Gen. Pl. n. 2396 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 260 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 153 (1890)

Dichrocephala latifolia, (LAM.) DC., in Contrib. Bot. Ind. p. 11 (1834), et Prodr. V. p. 372 (1836); HOOK. f., Fl. Brit. Ind. III. p. 245 (1881); MATSUM., Ind. Pl. Jap. II. 2. p. 645 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 140 (1912); RIDLEY, Fl. Malay II. p. 194 (1923); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 582 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1228 (1931)

Syn. *Grangea latifolia*, LAM., ex POIR. Encycl. Suppl. II. p. 826 (1812)

Nom. Jap. *Bukuryô-sai*

Leg. Ipse, Kosugidani, Sept. 4, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is found in waste or in cultivated lands as a pioneer.

Lagenophora, CASS., in Bull. Soc. Philom. p. 34 (1818), et Dict. Sc. Nat. XXV. p. 109 (1822); DC., Prodr. V. p. 307 (1836); ENDL., Gen. Pl. n. 2351 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 263 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 155 (1890); LEMÉE, Dict. Gen. Pl. Phan. III. p. 922 (1931)

Syn. *Lagenifera*, CASS., in Bull. Soc. Phil. p. 199 (1815)

Solenogyne, DC., Prodr. V. p. 367 (1836)

Lagenophora Billardieri, CASS., Dict. Nat. Soc. XXV. p. 111 (1822); DC., Prodr. V. p. 307 (1836); BENTH., Fl. Hongk. p. 173 (1861); HOOK. f., Fl. Brit. Ind. III. p. 248 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 407 (1888); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 140 (1912); MERR., Enum. Philipp. Pl. III. p. 599 (1923); GAGNEPAIN, in LECOMTE Fl. Ind. Chin. III. 5. p. 622 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1247 (1931)

Nom. Jap. *Koke-senbongiku*

Leg. Ipse, Aug. 2, 1927.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China, Malay, Philippines.

Note. The species is found in the lowlands especially on somewhat sunny ground, but rather on rare occasions.

Rhynchospermum, REINW., in Sylloge Ratisb. II. p. 7 (1828); ENDL., Gen. Pl. n. 2333 (1836-40); DC., Prodr. V. p. 296 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 263 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 155 (1890)

Syn. *Leptocoma*, LESS., in Linn. VI. p. 130 (1831)

Zollingeria, SCHULTZ, Bip. in Flora XXXVII. p. 273 (1854)

Rhynchospermum verticillatum, REINW., in Syll. Ratisb. II. p. 8 (1828); DC., Prodr. V. p. 296 (1836); FR. et SAV., Enum. Pl. Jap. I. p. 228 (1875); DIELS, Fl. Cent. Chin. p. 609 (1901); MATSUM., Ind. Pl. Jap. II. 2. p. 661 (1912); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 624 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1256 (1931)

Syn. *Rhynchospermum verticillatum*, REINW., var. *subsessilis*, OLIVER; MORI, Enum. Pl. Cor. p. 364 (1922)

Nom. Jap. *Syûbunsô*

Leg. Ipse, Aug. 20, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China.

Note. The species is found as undergrowth in the lauri-aciculisilvae, and is common in the southern part of Japan.

Myriactis, LESS., in Linnaea VI. p. 127 (1831); DC., Prodr. V. p. 308 (1836); ENDL., Gen. Pl. n. 2353 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 262 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 155 (1890); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 609 (1932)

Syn. *Botryadenia*, FISCH. et MEY., Ind. Sem. Hort. Petr. II. p. 30 (1835)
Hecatactis, F. MUELL, in Trans. Roy. Soc. Vict. New Ser. I. 2. p. 13 (1889)

Myriactis japonensis, KOIDZ., in Tokyo Bot. Mag. XXXVIII. p. 98 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 1252 (1931)

Syn. *Solenogyne japonensis*, MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929)

Nom. Jap. *Hime-kiku-tabirako*

Leg. Ipse, Aug. 22, 1928.

Distr. Endemica.

Note. The species occurs on marshy ground from 1500 m up to 1900 m above the sea level. It is restricted to this island, and it is worth while observing that the genus *Myriactis* has not yet been discovered in lands further north than Yakusima, while it is found in Amami-Ōsima and Formosa.

Aster, [TOURN., ex LINN. Syst. ed. 1 1735, et Gen. Pl. ed. 1. p. 254 (1737)] et Sp. Pl. ed. 1. p. 872 1753; ENDL., Gen. Pl. n. 2301 (1836-40); DC., Prodr. V. p. 226 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 271 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 161 (1890); LEMÉE, Dict. Gen. Pl. Phan. I. p. 421 (1929)

Syn. *Coelestina*, HILL., Hort. Kew. p. 8. (1769)

Asteromaea, BL., Bij. p. 901 (1827); DC., Prodr. V. p. 302 1836

Hisulsua, DC., Prodr. VI. p. 44. 1837

Aster indicus, LINN., Sp. Pl. ed. 1. p. 876 (1753); FR. et SAV., Enum. Pl. Jap. II. p. 398 1876; FR., Pl. David. I. p. 160 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 413 1888; DIELS, Fl. Cent. Chin. p. 609 (1901); HAY., Comp. Formos. p. 14 1904; NAK., Fl. Kor. II. p. 8 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 263 1930; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 141 1912; MASAMUNE, Prel. Rep. Veg. Yak. p. 125 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1196 1931

Syn. *Asteromea indica*, BL., Bijdr. p. 901 (1828); DC., Prodr. V. p. 303 1836; SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 184 1846; MATSUM., Ind. Pl. Jap. II. 2. p. 629 1912; LOESN., Pfl.-welt. Kiautch. Geb. p. 189 1918

Hisulsua serrata, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 265 1836-40

Nom. Jap. *Ko-yomena*

Leg. Ipse, Onoaida, Sept. 5, 1926.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Taiwan, Bonins, Korea, China.

Note. The species occurs in low waste lands or on forest edges.

Aster Maackii, REGEL, Tent. Fl. Ussur. n. 252 (1861); MAK., in Tokyo Bot. Mag. XXI. p. 137 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 627 1912; MAK. et NEM., Fl. Jap. ed. 2. p. 1197 (1931)

Syn. *Aster Kodzumanus*, MAK., in Tokyo Bot. Mag. XXI. p. 16 1907

Nom. Jap. *Higo-sion*

Leg. A. KIMURA! Aug. 1, 1922. (?)

Distr. Kyūsyū.

Note. The species has its southern limit in this island.

Conyza, [LINN., Gen. Pl. ed. 1. p. 251 1737] et Sp. Pl. ed. 1. p. 861 (1753); LESS., Synops. Compos. p. 203 (1832); DC., Prodr. V. p. 377 (1836); ENDL., Gen. Pl. n. 2405 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 283 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 169 (1889); LEMÉE, Dict. Gen. Pl. Phan. II. p. 293 (1930)

Syn. Marsea, ADANS., Fam. II. p. 122 (1763)

Conysa, BURM. f., Fl. Ind. p. 180 (1768)

Conyza japonica, (THUNB.) LESS., Syn. Comp. p. 204 (1832); DC., Prodr. V. p. 382 (1836); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 184 (1846); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 171 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 229 (1875); HOOK. f., Fl. Brit. Ind. III. p. 258 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 419 (1888); DIELS, Fl. Cent. Chin. p. 612 (1901); HAY., Comp. Formos. p. 15 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 643 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 142 (1912); CAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 614 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1226 (1931)

Syn. Erigeron japonicum, THUNB., Fl. Jap. p. 312 (1784)

Conyza veronicaefolia, WALL.; DC., Prodr. V. p. 382 (1836); BENTH., Fl. Hongk. p. 176 (1861)

Nom. Jap. Watana

Leg. SERIZAWA! ca. Ambô.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, China, Philippines, India.

Note. Occurs in waste lands or grows as an invader in clearings.

Blumea, DC., in Guillemain, Arch. de Bot. II. p. 514 (1833), et Prodr. V. p. 432 (1836); ENDL., Gen. Pl. n. 2413 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 289 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. p. 175 (1890); LEMÉE, Dict. Gen. Pl. Phan. I. p. 599 (1929)

Syn. Placus, LOUR., Fl. Cochinch. p. 496 (1790)

Blumea fruticosa, KOIDZ., Pl. Nov. Amami-Ôsima, p. 9 (1928); MAK. et NEM., Fl. Jap. ed. 2. p. 1202 (1931)

Nom. Jap. Ôkibana-mukasi-yomogi

Leg. Ipse, Mart. 21, 1923.

Distr. Amami-Ôsima, Okinawa.

Note. This species is found in the laurisilvae in somewhat wet places, and is restricted to the Ryûkyû archipelago.

Anaphalis, DC., Prodr. VI. p. 271 (1837); ENDL., Gen. Pl. n. 2768 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 303 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 186 (1890); LEMÉE, Dict. Gen. Pl. Phan. I. p. 233 (1929)

Syn. Margaripes, DC., ex STEUD. Nom. ed. 2. II. p. 101 (1841)

Anaphalis yakusimensis, MASAMUNE, (Pl. I.) Prel. Rep. Veg. Yak. p. 125 (1929)

Herbae perennes ca. 15 cm altae, saepe ramosae sericeo-lanatae. Folia obovato-lanceolata vel lineari-lanceolata 0.7-2.5 cm longa 1.5-4 mm lata, basi attenuata sessilia utrimque dense sericeo-lanata. Capitula 5-7 cymosa. Involucrum late obconico-campanulatum 2-5 mm longum 5-8 mm latum, bracteis multiserialim dispositis, ovato-lanceolatis chartaceis albis apice obtusis, ca. 2-3 mm longis ca. 1 mm latis, basi hirsutis. Fl. ♀ ∞. Corollae filiformis.

Nom. Jap. Yakusima-usuyukisô

Leg. Ipse, Nagatadake, ca. 1500 m. Aug. 1928.

Distr. Endemica.

Note. Occurs in the alpine region especially in gravelly land in the Pseudosasa Owatarii Association.

Gnaphalium, [LINN., Gen. Pl. ed. 1. p. 250 (1737)]

et Sp. Pl. ed. 1. p. 850 (1753); DC., Prodr. VI. p. 221 (1837); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 305 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 187 (1890); LEMÉE, Dict. Gen. Pl. Phan. III. p. 289 (1931)

Syn. *Cyttarium*, PETERN., Fl. lip. exc. p. 609 (1838) p.p.

Gnaphalium japonicum, THUNB., Fl. Jap. p. 311 (1784); DC., Prodr. VI. p. 237 (1837); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 187 (1846); BENTH., Fl. Austral. III. p. 653 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 241 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 427 (1888); DIELS, Fl. Cent. Chin. p. 613 (1901); HAY., Comp. Formos. p. 32 (1904); NAK., Fl. Kor. II. p. 14 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 649 (1912); MERR., Enum. Philipp. Pl. III. p. 608 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1235 (1931)

Nom. Jap. *Titikogusa*

Leg. Ipse, Kosugidani, ca. 600 m April. 1927.

Distr. Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China, Philippines, Australia.

Note. The species is found in waste lands, in clearings in the laurisilvae or in the lauri-aciculisilvae. This is a common species in Eastern Asia.

Gnaphalium luteo-album, LINN. var. *multiceps*, HOOK. f., Fl. Brit. Ind. III. p. 288 1881

Syn. *Gnaphalium arenarium*, THUNB., Fl. Jap. p. 312 (1784)

Gnaphalium multiceps, BENTH., Fl. Hongk. p. 188 (1861); FR. et SAV., Enum. Pl. Jap. I. p. 241 (1875); FR., Pl. David. I. p. 163 1884; MAXIM., in Engl. Bot. Jahrb. VI. p. 69 (1882); FORB. et HEMSL., Ind. Fl. Sin. I. p. 427 (1888); HAY., Comp. Formos. p. 31 (1904); NAK., Fl. Kor. II. p. 13 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 649 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 144 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 190 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 1929

Gnaphalium luteo-album, (non LINN.) HAY., Comp. Formos. p. 32 (1904) p.p.; MAK. et NEM., Fl. Jap. ed. 2. p. 1235 (1931) p.p.

Nom. Jap. *Hahako-gusa*

Leg. Ipse, Sept. 4, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, India.

Note. Occurs in cultivated or waste lands in the laurisilvae and in the lauri-aciculisilvae.

Carpesium, [LINN., in Act. Soc. Up. p. 80 (1741)]

et Sp. Pl. ed. 1. p. 859 (1753); DC., Prodr. VI. p. 281 (1837); ENDL., Gen. Pl. n. 2775 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 336 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 206 (1890); LEMÉE, Dict. Gen. Pl. Phan. I. p. 846 (1929)

Syn. *Conyzoides*, (TOURN.) ex DC. Prodr. VI. p. 281 (1837)

Carpesium abrotanoides, LINN. var. *Thunbergianum*, MAK., in Journ. Jap. Bot. II. 6. p. 22 (1922), et in MAK. et NEM. Fl. Jap. ed. 1. p. 36 (1925), et ed. 2. p. 1208 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929)

Syn. *Carpesium abrotanoides*, (non LINN.) MAXIM., in Mél. Biolog. IX. p. 290 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 244 (1875); MIQ., in Ann. Mus. Bot.

Lugd. Bat. II. p. 179 (1866); HAY., Comp. Formos. p. 33 (1904); NAK., Fl. Kor. II. p. 17 (1911)

Carpesium Thunbergii, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 187 (1846)

Nom. Jap. *Yabu-tabako*

Leg. Ipse, Aug. 10, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea.

Note. Occurs as undergrowth in clearings in the laurisilvae or the lauri-aciculisilvae.

Carpesium cernuum, LINN., Sp. Pl. ed. 1. p. 859 (1753); MAXIM., in Mél. Biolog. IX. p. 286 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 243 (1875); HOOK. f., Fl. Brit. Ind. III. p. 300 (1881); FR., Pl. David. I. p. 164 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 430 (1888); KOM., Fl. Mansh. III. p. 616 (1907); NAK., Fl. Kor. II. p. 17 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 635 (1912); LOESEN., Pfl.-welt. Kiautsch. Geb. p. 191 (1918); MERR., Enum. Philipp. Pl. III. p. 609 (1923); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 4. p. 560 f. 59-11 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1209 (1931)

Nom. Jap. *Sazi-gankubi*

Leg. Ipse, Kosugidani, Jul. 24, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, Manchuria, China, Philippines, India.

Note. Occurs as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

Carpesium rosulatum, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 179 (1866); MAXIM., in Mél. Biolog. IX. p. 287 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 244 (1875); MATSUM., Ind. Pl. Jap. II. 2. p. 635 (1912); MORI, Enum. Pl. Cor. p. 352 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1209 (1931)

Nom. Jap. *Hime-gankubi*

Leg. Ipse, Kosugidani, Aug. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Korea.

Note. Occurs in clearings of the laurisilvae or the lauri-aciculisilvae.

Siegesbeckia, [LINN., Hort. Cliff. p. 412 1737, et Gen. Pl. ed. 1. p. 352 (1737)] et Sp. Pl. ed. 1. p. 900 (1753); DC., Prodr. V. p. 495 (1836); ENDL., Gen. Pl. n. 2451 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 359 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 230 (1890)

Syn. *Siegesbeckia*, GLED., in Mem. Acad. Berlin V. p. 131 (1751)

Siegesbekia, ALL., Misc. Taurin. II. p. 59 (1761)

Siegesbeckia orientalis, LINN., Sp. Pl. ed. 1. p. 900 (1753); LOUR., Fl. Cochinch. ed. WILLD. p. 616 (1793); ROXB., Fl. Ind. III. p. 439 (1832); LESS., Synop. Comp. p. 211 (1832); DC., Prodr. V. p. 495 (1836); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 185 (1846) p.p.; BENTH., Fl. Hongk. p. 182 (1861), et Fl. Austral. III. p. 535 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 231 (1875) p.p.; CLARKE, Comp. Ind. p. 133 (1876); OLIVER, Fl. Trop. Afr. III. p. 372 (1877); HOOK. f., Fl. Brit. Ind. III. p. 304 (1881); FR., Pl. David. p. 164 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 433 (1888); HILLEBRAND, Fl. Hawai. Isl. p. 204 (1888); HAY., Comp. Formos. p. 17 (1904); NAK., Fl. Kor. II. p. 19 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 667 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 145 (1912); LOESN., Pfl.-welt.

Kiautsch. Geb. p. 191 (1918); MERR., Enum. Philipp. Pl. III. p. 610 (1923); RIDLEY, Fl. Malay. II. p. 184 (1923); GAGNEPAIN, in LECOMTE Fl. Ind. Chin. III. 5. p. 600 (1924); MERR., Enum. Hainan Pl. p. 184 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1267 (1931)

Nom. Jap. *Tukusi-menamomi*

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, Korea, China, Malay, Philippines.

Note. Grows in low waste lands or in cleared lands.

Siegesbeckia pubescens, MAK., in Journ. Jap. Bot. I. p. 24 1917; MAK. et NEM., Fl. Jap. ed. 2. p. 1367 (1931)

Syn. *Siegesbeckia orientalis*, (non LINN.) THUNB., Fl. Jap. p. 321 (1784) p.p.; SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 185 (1846) p.p.; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 172 1866 p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 667 (1912) p.p.

Nom. Jap. *Menamomi*

Leg. Ipse, April. 2, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa.

Note. Grows in cultivated or waste lands near villages.

Eclipta, LINN., Mant. II. p. 157 1771; ENDL.,

Gen. Pl. n. 2446 1836-40; DC., Prodr. V. p. 489 1836; BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 361 1873; HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 231 1890; LEMÉE, Dict. Gen. Pl. Phan. II. p. 799 1930

Syn. *Ecliptica*, [RUM., Herb. Amb. VI. p. 48 1750] O. KUNTZE, Rev. Gen. Pl. I. p. 334 (1891)

Eclipta alba, HASSK., Pl. Jav. Rar. p. 528 1818; MIQ., in Fl. Ind. Bat. II. p. 65 1857; et in Ann. Mus. Bot. Lugd. Bat. II. p. 172 1866; FR. et SAV., Enum. Pl. Jap. I. p. 230 (1875); HOOK. f., Fl. Brit. Ind. III. p. 334 1881; HAY., Comp. Formos. p. 17 1904; KOM., Fl. Mansh. III. p. 629 1907; NAK., Fl. Kor. II. p. 19 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 264 1930; MATSUM., Ind. Pl. Jap. II. 2. p. 645 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 145 (1912); MERR., Fl. Manila p. 476 (1912), et Enum. Hainan Pl. p. 184 1927; LOESN., Pfl.-welt. Kiautsch. Geb. p. 191 (1918); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 599 1924; MASAMUNE, Prel. Rep. Veg. Yak. p. 127 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1228 (1931)

Syn. *Verbesina alba*, LINN., Sp. Pl. p. 903 (1753)

Eclipta erecta, LINN., Mant. II. p. 286 (1771)

Eclipta prostrata, THUNB., Fl. Jap. p. 321 (1784)

Anthemis cotala, non LINN.) BLANCO, Fl. Filip. p. 633 (1837)

Nom. Jap. *Takasaburô*

Leg. Ipse, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, Bonins, Manchuria, China.

Note. Occurs in waste lands, by the roadside, in low lands, and in the lauri-silvae.

Wedelia, JACQ., Enum. Pl. Carib. p. 8 1760, et Select. Stirp. Amer. Hist. p. 217 (1763); ENDL., Gen. Pl. n. 2496 (1836-40); DC.,

Prodr. V. p. 538 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. pp. 369 et 370 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 234 (1890)

Syn. *Serunium*, [RUMPH., Herb. Amb. V. p. 423, t. 156 (1747)] O. KUNTZE, Rev. Gen. Pl. I. p. 364 (1891)

Wedelia biflora, (LINN.) DC., in Wight Contr. Bot. Ind. p. 18 (1834); BENTH., Fl. Hongk. p. 183 (1861), et Fl. Austral. III. p. 539 (1866); HANCE, in Journ. Linn. Soc. XIII. p. 108 (1872); CLARKE, Comp. Ind. p. 137 (1876); OLIVER, Fl. Trop. Afric. III. p. 376 (1877); HOOK. f., Fl. Brit. Ind. III. p. 306 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 433 (1888); HAY., Comp. Formos. p. 19 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 669 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 145 (1912); RIDLEY, Fl. Malay, II. p. 185 (1923); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 604 (1924); MERR., Enum. Hainan Pl. p. 184 (1927); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 264 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1275 (1931)

Syn. *Verbesina biflora*, LINN., Sp. Pl. ed. 2. p. 1272 (1763)

Wollastonia biflora, DC., Prodr. V. p. 546 (1836); MIQ., Fl. Ind. Bat. II. p. 70 (1857)

Nom. Jap. *Simahamaguruma*

Leg. Ipse, Kurio, Aug. 4, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines, Malay, Western Polynesia.

Note. The psammophyte covers the sandy ground of the seashore of the littoral regions.

Wedelia calendulacea, LESS., Syn. Comp. p. 222 (1832); DC., Prodr. V. p. 539 (1836); WIGHT, Ic. Pl. Ind. Or. t. 1107 (1846); BENTH., Fl. Hongk. p. 182 (1861), et Fl. Austral. III. p. 537 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 232 (1875); MAXIM., in Engl. Bot. Jahrb. VI. p. 68 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 434 (1888); HENRY, List Pl. Formos. p. 54 (1896); HAY., Comp. Formos. p. 19 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 669 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 145 (1912); GAGNEPAIN, LECOMTE, Fl. Ind. Chin. III. 5. p. 602 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1275 (1931)

Syn. *Verbesina calendulacea*, LINN., Sp. Pl. ed. 1. p. 902 (1753); LOUR., Fl. Cochinch. ed. 2. p. 506 (1790); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 265 (1836-40)

Nom. Jap. *Kumanogiku*

Leg. Ipse, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species is often found in the lowland among cultivated rice fields.

Wedelia chinensis, (OSBECK.) MERR., in Philipp. Journ. Sc. XII. Bot. p. 111 (1917), et Enum. Philipp. Pl. III. p. 611 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929)

Syn. *Solidago chinensis*, OSBECK., Dagbok. Ostind. Resa. p. 241 (1757)

Verbesina prostrata, HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 195 (1836-40)

Wollastonia prostrata, HOOK. et ARN., Bot. Cap. Beech. Voy. p. 265 (1836-40)

Wedelia prostrata, HEMSL., in FORB. et HEMSL. Ind. Fl. Sin. I. p. 434 (1888);

HAY., Comp. Formos. p. 18 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 669 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 145 (1912); NAK., in

Bull. Biogeogr. Soc. Jap. I. p. 264 (1930); YAMAZUTA, List Manch. Pl. p. 289 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1275 (1931)

Nom. Jap. *Hama-guruma*

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Manchuria, Philippines.

Note. The psammophyte grows on sandy beaches, and is common in South Japan.

var. **robusta**, MASAMUNE, Prel. Rep. Veg. Yak. p. 123 (1929)

Syn. *Wedelia prostrata*, HEMSL. var. *robusta*, MAK., in Journ. Jap. Bot. 1. p. 23 f. 2 (1917); MAK. et NEM., Fl. Jap. ed. 1. p. 1275 (1925)

Nom. Jap. *Ôhamaguruma*

Leg. Ipse, Nagata.

Distr. Sikoku.

Note. This psammophyte is found only in Sikoku and this island.

Bidens, [TOURN., ex LINN. Gen. Pl. ed. 1. p. 248 (1737) et Sp. Pl. ed. 1. p. 831 (1753); ENDL., Gen. Pl. n. 2541 (1836-40); DC., Prodr. V. p. 593 (1836); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 387 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 244 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 571 (1929)]

Bidens pilosa, LINN., Sp. Pl. ed. 1. p. 832 (1753); THUNB., Fl. Jap. p. 307 (1784); LOUR., Fl. Cochinch. p. 488 (1790); HOOK., Niger Fl. 435 (1849); BENTH., Fl. Hongk. p. 183 (1861); CLARKE, Comp. Ind. p. 140 (1876); OLIVER, Fl. Trop. Afric. III. p. 392 (1877); HEMSL., Voy. Chall. Bot. Part 1. p. 45, et Part 3. p. 161 (1884); MAXIM., in Engl. Bot. Jahrb. VI. p. 69 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 435 (1888); HILLEBRAND, Fl. Hawai. Isl. p. 217 (1888); DIELS, Fl. Centr. Chin. p. 616 (1901); HAY., Comp. Formos. p. 20 (1904); NAK., Fl. Kor. II. p. 20 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 263 (1930); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 146 (1912); RIDLEY, Fl. Malay. II. p. 183 (1923); MERR., Enum. Philipp. Pl. III. p. 614 (1923), et Enum. Hainan Pl. p. 185 (1927); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 606 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 125 (1929)

Syn. *Bidens chinensis*, WILLD., Sp. Pl. III. p. 1719 (1800); LOESN., Pfl.-Welt. Kiautsch. Geb. p. 192 (1918)

Nom. Jap. *Sirobana-sendangusa*

Leg. Ipse, Onoaida, Sept. 5, 1926.

Distr. Honsyû, Sikoku, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines, Malay.

Note. Occurs in the lowlands, waste lands and clearings, and is common in South Japan.

Chrysanthemum, [TOURN., ex LINN. Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 255 (1737)] et Sp. Pl. ed. 1. p. 887 (1753); ENDL., Gen. Pl. n. 2667 (1836-40); DC., Prodr. VI. p. 63 (1837); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 424 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. V. v. p. 277 (1890); LEMÉE, Dict. Gen. Pl. Phan. II. p. 149 (1930)

Syn. *Matricaria*, (HALL.) ex SCOP. Fl. Carn. ed. 2. II. p. 147 (1772)

Chrysanthemum indicum, LINN., Sp. Pl. ed. 1. p. 889 (1753) *excl. Syn.*; HOOK. f., in CURTIS'S Bot. Mag. t. 7874 (1903); MAK., in Tokyo Bot. Mag. XXIII. p. 18 (1909);

NAK., Fl. Kor. II. p. 24 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 146 (1912); MATSUM., Ind. Pl. Jap. II. 2. p. 637 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929); YAMAZUTA, List Manch. Pl. p. 272 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1212 (1931)

Syn. *Pyrethrum indicum*, CASS., in Dict. Soc. Nat. XLIV. p. 149 (1926)

Nom. Jap. *Hama-kangiku*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria, China, India.

Note. Occurs in low and somewhat open lands.

Chrysanthemum japonense, NAK., in Tokyo Bot. Mag. XLII. p. 459 (1928); MAK. et NEM., Fl. Jap. ed. 2. p. 1212 (1931)

Syn. *Chrysanthemum sinense*, var. *sinense*, MAXIM., apud Mak. III. Fl. Jap. I. Pl. XLIII. (1891)

Chrysanthemum sinense, var. *spontaneum*, MAK., in Tokyo Bot. Mag. XXIII. p. 18 (1909); MATSUM., Ind. Pl. Jap. II. 2. p. 638 (1912)

Chrysanthemum morifolium, β *genuinum*, f. *japonense*, MAK., in Tokyo Bot. Mag. XXVI. p. 216, f. XVIII. (1912)

Nom. Jap. *Nozigiku*

Leg. Ipse, April. 3, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. Occurs in open lands, and is rather common in South Japan.

Centipeda, LOUR., Fl. Cochinch. p. 492 (1790);

ENDL., Gen. Pl. n. 2396 (1836-40); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 280 (1890); LEMÉE, Dict. Gen. Pl. Phan. II. p. 13 (1930)

Syn. *Myriogyne*, LESS., in Linnaea VI. p. 219 (1831)

Centipeda minima, A. BR. et ASCHERS., Ind. Sem. Hort. Berol. App. p. 6 (1867); NAK., Fl. Kor. II. p. 26 (1911); MERR., Fl. Manila p. 473 (1912), et Enum. Philipp. Pl. III. p. 615 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1211 (1931)

Syn. *Artemisia minima*, LINN., Sp. Pl. ed. 1. p. 849 (1753)

Centipeda orbicularis, LOUR., Fl. Cochinch. p. 493 (1790); MIQ., Fl. Ind. Bat. II. p. 89 (1857); HOOK. f., Fl. Brit. Ind. III. p. 317 (1881); FR., Pl. David. I. p. 167 (1884); KOM., Fl. Mansh. III. p. 650 (1907); MATSUM., Ind. Pl. Jap. II. 2. p. 636 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 193 (1918)

Cotula minima, WILLD., Sp. Pl. III. p. 2170 (1804)

Myriogyne minuta, LESS., in Linn. VI. p. 219 (1831); DC., Prodr. VI. p. 139 (1837); SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 187 (1846); BENTH., Fl. Hongk. p. 186 (1861), et Fl. Austral. III. p. 553 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 241 (1875); CLARKE, Comp. Ind. p. 151 (1876); FORB. et HEMSL., Ind. Fl. Sin. I. p. 440 (1888)

Nom. Jap. *Tokinsô*

Leg. Ipse, Jun. 23, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, Malay, India, Australia, Polynesia.

Note. Occurs by the roadside, in cultivated or waste lands at low altitudes.

Artemisia, [LINN., Syst. ed. 1. (1735), et Gen. Pl. ed. 1. p. 250 (1737)] et Sp. Pl. ed. I. p. 845 (1753); ENDL., Gen. Pl. n. 2694 (1836-

40); DC., Prodr. VI. p. 93 (1837); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 435 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 281 (1890); LEMÉE, Dict. Gen. Pl. Phan. I. p. 394 (1929)

Artemisia japonica, THUNB., Fl. Jap. p. 310 (1784); DC., Prodr. VI. p. 100 (1837); BENTH., Fl. Hongk. p. 186 (1861); MAXIM., in Mém. Biolog. VIII. p. 526 (1872); FR., Pl. David. I. p. 168 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 443 (1888); HAY., Fl. Mont. Formos. p. 135 (1908); NAK., Fl. Kor. II. p. 33 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 624 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 147 (1912); MERR., Enum. Philipp. Pl. III. p. 616 (1923), et Enum. Hainan Pl. p. 185 (1927); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 585 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 125 (1929); YAMAZUTA, List Manch. Pl. p. 264 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1190 (1931)

Syn. *Artemisia parviflora*, BUCH., ex ROXB. Fl. Ind. III. p. 420 (1832); HOOK. f., Fl. Brit. Ind. III. p. 322 (1881)

Artemisia cuneifolia, DC., Prodr. VI. p. 126 1837

Nom. Jap. *Otokoyomogi*

Leg. Ipse, Ambô, Aug. 31, 1931.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, India.

Note. Occurs in cultivated or waste lands near the sea level.

Artemisia lavandulifolia, DC., Prodr. VI. p. 110 (1837); KOM., Fl. Mansh. III. p. 678 (1907); NAK., Fl. Kor. II. p. 29 (1911); LOESNER, Pfl.-welt. Kiautsch. Geb. p. 193 1918; MASAMUNE, Prel. Rep. Veg. Yak. p. 125 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1191 1931

Syn. *Artemisia vulgaris*, LINN. var. *parviflora*, MAXIM., Prim. Fl. Amur. p. 160 (1859); FR. et SAV., Enum. Pl. Jap. I. p. 239 1875; MATSUM., Ind. Pl. Jap. II. 2. p. 626 1912

Nom. Jap. *Hime-yomogi*

Leg. Ipse, Aug. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. Occurs in waste lands or by the roadside at low altitudes.

Artemisia vulgaris, LINN. var. *indica*, MAXIM., Prim. Fl. Amur. p. 536 (1859); FR. et SAV., Enum. Pl. Jap. I. p. 239 (1875); HAY., Comp. Formos. p. 24 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 626 (1912); MORI, Enum. Pl. Cor. p. 346 (1922); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 584 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 125 (1928); YAMAZUTA, List Manch. Pl. p. 266 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1193 (1931)

Syn. *Artemisia indica*, WILLD., Sp. Pl. III. p. 1846 (1800); DC., Prodr. VI. p. 114 (1837)

Artemisia nipponica, NAK., in Bull. Biogeogr. Soc. Jap. I. p. 263 (1930) nom.

Nom. Jap. *Yomogi*

Leg. Ipse, Aug. 13, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China.

Note. Occurs in cultivated fields, waste lands, and clearings from the sea level up to 700 m, and is widely distributed throughout Japan.

Petasites, [TOURN., ex LINN. Syst. ed. 1 (1735)]

GAERTN., Fruct. II. p. 406, t. 166 (1791); DC., Prodr. V. p. 206 (1836); ENDL.

Gen. Pl. n. 2286 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 438 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 290 (1892)

Petasites japonicus, MIQ. var. **typicus**, MAK., in Tokyo Bot. Mag. XXIII. p. 17 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929)

Syn. *Tusilago petasites*, SIEB., Syn. Pl. Oecon. Jap. p. 39 (1830)

Nardosima japonica, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 181 (1846)

Petasites albus, (non GAERTN.) A. GRAY, in Narr. Perry Exp. II. p. 314 (1856)

Petasites spurius, (non REICHB. f.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 168 (1866)

Petasites japonicus, MIQ., Prol. Fl. Jap. p. 390 (1865-67); FR. et SAV., Enum. Pl. Jap. I. p. 220 (1875); LOESN., Pfl.-welt. Kiautsch. Geb. p. 194 (1918); MAK. et NEM., Fl. Jap. ed. 2. p. 1254 (1931)

Nom. Jap. *Huki*

Leg. Ipse, Kosugidani, Cult.?

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. The variety has its southern limit in this island.

Gynura, CASS., in Dict. Sc. Nat. XXXIV. p. 391

(1825); ENDL., Gen. Pl. n. 2792 (1836-40); DC., Prodr. VI. p. 298 (1837); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 445 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 295 (1892); LEMÉE, Dict. Gen. Pl. Phan. III. p. 401 (1931)

Syn. *Crassocephalum*, MOENCH, Meth. p. 516 (1794); O. KUNTZE, Rev. Gen. Pl. I. p. 331 (1891)

Cremonocephalum, CASS., in Dict. Sc. Nat. XXXIV. p. 390 (1825)

Cynaëura, HASSK., Cat. Pl. Hort. Bog. Alt. p. 103 (1844)

Gynura bicolor, DC., Prodr. VI. p. 299 (1837); HOOK. f., Fl. Brit. Ind. III. p. 335 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 447 (1888); HAY., Comp. Formos. p. 25 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 649 (1912); MERR., Enum. Hainan Pl. p. 185 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1236 (1931)

Syn. *Cacalia bicolor*, ROXB., Cat. Calc. n. 61 (1813), et Fl. Ind. III. p. 412 (1832); Bot. Reg. II. t. 110 (1826)

Gynura angulosa, HANCE, in Journ. Bot. XXI. p. 322 (1883)

Nom. Jap. *Sûzenzina*

Leg. Ipse, April. 2, 1927.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. Occurs on several occasions on wet ground at low altitudes.

Cacalia, [BURM., Thes. Zeyl. p. 52, t. 21 (1737)]

LINN., Sp. Pl. ed. 1. p. 834 (1753); ENDL., Gen. Pl. n. 2806 (1836-40); DC., Prodr. VI. p. 327 (1837); O. KUNTZE, in POST et O. KUNTZE Lexic. Gen. Phan. p. 515 (1903); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 296 (1892)

Cacalia Krameri, MATSUM., Syokubutu-meii n. 586 (1895), et Ind. Pl. Jap. II. 2. p. 633 (1912); KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 317 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 1206 (1931)

Syn. *Senecio Krameri*, FR. et SAV., Enum. Pl. Jap. I. p. 248 (1875), et II. p. 406 (1876)

Nom. Jap. *Yabure-gasa*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Kyûsyû.

Note. I have not collected this species in the island, but Dr. KUDO found it there. It has its southern limit in the island. In Formosa, it is reported to be found, but I think the Formosan species is a different one from this.

Cacalia kiusiana, MAK., in Tokyo Bot. Mag. XXIV. p. 228 (1910); MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1206 (1931)

Nom. Jap. *Momizi-kômorî*

Leg. Ipse, Yaegadake, Sept. 1, 1931.

Distr. Kyûsyû.

Note. Grows in the Pseudosasa Owatarii Association in mountainous region from about 1600 m up to 1900 m above the sea level.

Cacalia yakusimensis, MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929, et in Journ. Trop. Agr. II. p. 37 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1207 (1931)

Nom. Jap. *Yakusima-kômorisô*

Leg. Ipse, Tatyûdake, Sept. 5, 1926.

Distr. Endemica.

Note. It is found in the lauri-aciculisilvae, and in the alpine region.

Senecio, [TOURN., ex LINN. Syst. ed. 1 1735, et Gen. Pl. I. p. 251 1737] et Sp. Pl. ed. 1. p. 866 1753; ENDL., Gen. Pl. n. 2811 (1836-40); DC., Prodr. VI. p. 340 (1837); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 446 1873; HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 296 (1892)

Syn. *Jacobaea*, ADANS., Fam. II. p. 124 1763

Doria, THUNB., Nov. Fam. II. p. 124 (1763)

Senecio, HILL, Hort. Kew. p. 25 1768

Emilia, CASS., in Bull. Soc. Philom. p. 68 (1817)

Senecio sonchifolia, MOENCH., Meth. Supp. p. 231 (1802); BENTH., Fl. Hongk. p. 189 (1861); MATSUM., Ind. Pl. Jap. II. 2. p. 666 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1265 (1931)

Syn. *Cacalia sonchifolia*, LINN., Sp. Pl. ed. I. p. 835 (1753)

Emilia sonchifolia, DC., Prodr. VI. p. 302 (1837); HOOK., Fl. Niger. p. 439 (1849); FR. et SAV., Enum. Pl. Jap. I. p. 245 (1875); CLARKE, Comp. Ind. p. 174 (1876); OLIVER, Fl. Trop. Afr. III. p. 405 (1877); MAXIM., in Engl. Bot. Jahrb. VI. p. 69 (1885); FORB. et HEMSL., Ind. Fl. Sin. I. p. 449 (1888); DIELS, Fl. Centr. Chin. p. 619 (1901); HAY., Comp. Formos. p. 26 (1904); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 148 (1912); RIDLEY, Fl. Malay II. p. 184 (1923); GAGNEPAIN, in LECOMTE Fl. Ind. Chin. III. 4. p. 517 (1924); MERR., Enum. Hainan Pl. p. 185 (1927)

Nom. Jap. *Usubenî-nigana*

Leg. A. KIMURA! Aug. 10, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, China.

Note. Occurs by the roadside on the edge of forests and near dwellings.

Ligularia, CASS., in Bull. Soc. Philom. p. 198 (1816); ENDL., Gen. Pl. n. 2799 (1836-40); DC., Prodr. VI. p. 313 (1837); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 449 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 301 (1892)

- Syn.** *Senecillis*, GAERTN., Fruct. II. p. 453, t. 173 (1791)
Erythrochaete, SIEB. et ZUCC., Fl. Jap. Fam. Nat. II. p. 188 (1846)
Farfugium, LINDL., in Gard. Chron. p. 4 (1857)

Ligularia hiberniflora, MAK., in Tokyo Bot. Mag. XXIV. p. 34 (1910); MATSUM., Ind. Pl. Jap. II. 2. p. 656 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1249 (1931)

Nom. Jap. *Kan-tuwabuki*

Leg. Ipse, Kusagawa, Jul. 19, 1928.

Distr. Tanegasima.

Note. The species occurs in wet places and on the edges of forests from the sea level up to about 400 m above, and is restricted to Tanegasima and Yakusima.

Ligularia tussilaginea, MAK., in Tokyo Bot. Mag. XVIII. p. 52 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 657 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1250 (1931)

- Syn.** *Tussilago japonica*, LINN., Mant. Pl. I. p. 113 (1767); HOUTT., Nat. Hist. XXVIII. p. 634 t. 68, t. 2 (1779); THUNB., Fl. Jap. p. 313 (1784); WILLD., Sp. Pl. III. p. 1963 (1800); SIEB., Syn. Pl. Oecon. Jap. p. 59 (1830)

Arnica tussilaginea, BURM., Fl. Ind. p. 182 (1768)

Senecio tussilaginea, O. KUNTZE, Rev. Gen. Pl. I. p. 364 (1891)

Senecio japonicus, LESS., Syn. Gen. Compos. p. 392 (1832)

Senecio Kaempferi, DC., Prodr. VI. p. 363 (1837); MAXIM., in Mém. Biolog. VIII. p. 14 (1871); FR. et SAV., Enum. Pl. Jap. I. p. 247 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 454 (1888)

Ligularia Kaempferi, SIEB. et ZUCC., Fl. Jap. I. p. 77, t. 35 (1838)

Farfugium Kaempferi, BENTH., Fl. Hongk. p. 191 (1861)

Nom. Jap. *Tuwabuki*

Leg. Ipse, Jul. 13, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, China.

Note. Occurs in wet places from the sea level up to about 400 m.

Saussurea, DC., in Ann. Mus. Paris XVI. pp. 156, 196, tt. 10 et 13 (1810), et Prodr. VI. p. 531 (1837); ENDL., Gen. Pl. n. 2853 (1836-40) p.p.; BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 471 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 320 (1892)

Syn. *Saussuria*, ST.-LAG., in Ann. Soc. Bot. Lyon. VIII. p. 175 (1881)

Jurinocera, BAILL., Hist. Pl. VIII. p. 81 (1886)

Saussurea yakusimensis, MASAMUNE, in Journ. Trop. Agr. II. p. 36 (1930)

Nom. Jap. *Yakusima-higotai*

Leg. Ipse, Hitigodake, Aug. 7, 1928.

Distr. Endemica.

Note. I found this new species in the alpine region under huge rocks.

Hemistepta, BUNGE, in Dorpat. Jahrb. Litt. I. p.

221 (1833)

Hemistepta carthamoides, O. KUNTZE, Rev. Gen. Pl. I. p. 344 (1891); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1239 (1931)

Syn. *Serratula carthamoides*, BUCH., ex ROXB. Fl. Ind. III. p. 407 (1832)

Hemistepta lyrata, BUNGE, in Dorpart. Jahrb. Litt. 1. p. 221 (1833), et in FISCH. et MEY., Ind. Sem. Hort. Petrop. II. p. 13 (1835); MAXIM., in Mél. Biolog. IX. p. 334 (1874)

Saussurea affinis, SPRENG., in DC. Prodr. VI. p. 540 (1837); CLARKE, Comp. Ind. p. 232 (1876); HOOK. f., Fl. Brit. Ind. III. p. 373 (1881); FORB. et HEMSLE., Ind. Fl. Sin. I. p. 463 (1888); DIELS, Fl. Cent. Chin. p. 624 (1901); HAY., Comp. Formos. p. 35 (1904); KOM., Fl. Mansh. III. p. 717 (1907); NAK., Fl. Kor. II. p. 42 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 149 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 195 (1918)

Aplotaxis carthamoides, DC., Prodr. VI. p. 540 (1837)

Aplotaxis multicaulis, DC., Prodr. VI. p. 540 (1837); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 183 (1866)

Aplotaxis Bungei, DC., Prodr. VI. p. 539 (1837)

Serratula tinctoria, SIEB., ex MIQ. in Ann. Mus. Bot. Lugd. Bat. II. p. 183 (1866)

Saussurea Bungei, BENTH. et HOOK. f., Gen. Pl. II. p. 472 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 255 (1875); FR., Pl. David. I. p. 182 (1884)

Nom. Jap. *Kitune-azami*

Leg. Ipse, Kurio, Mart. 22, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Occurs in low waste lands.

Cirsium, (TOURN.) ex ADANS., Fam. II. p. 116 (1763); DC., in Lam. et DC. Fl. Fr. ed. 3. IV. p. 110 (1805), et Prodr. VI. p. 634 (1837); ENDL., Gen. Pl. n. 2887 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 468 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 322 (1892); LEMÉE, Dict. Gen. Pl. Phan. II. p. 171 (1930)

Syn. *Cnicus*, [LINN., Syst. ed. 1 (1735), et Gen. Pl. ed. 1. p. 245 (1737)] et Sp. Pl. ed. 1. p. 826 (1753) p.p.

Cirsium japonicum, DC., Prodr. VI. p. 640 (1837); MATSUM., Ind. Pl. Jap. II. 2. p. 640 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 196 (1918); KITAMURA, *Cirsium* Nov. p. 10 (1931)

Syn. *Carduus eriophorus*, THUNB., Fl. Jap. p. 305 (1784)

var. typicum, NAK., in Tokyo Bot. Mag. XXVI. p. 379 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1219 (1931)

Syn. *Cnicus japonicus*, a *typicus*, MAXIM., in Mél. Biolog. IX. p. 323 (1874); FR. et SAV., Enum. Pl. Jap. II. p. 415 (1876); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 4, p. 496 (1924)

Cirsium japonicum, subsp. *genuinum*, a *typicum*, NAK., in Tokyo Bot. Mag. XXV. p. 59 (1911) p.p.

Nom. Jap. *No-azami*

Leg. Ipse, Jul. 13, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, China?

Note. Occurs as a member of the secondary vegetation in the land which lies waste after clearing or burning and is not yet reported in the lands further south than this island.

Cirsium brevicaulis, A. GRAY, Bot. Jap. p. 396 (1858); HAY., Comp. Formos. p. 34

(1904) p.p.; MATSUM., Ind. Pl. Jap. II. 2. p. 639 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1217 (1931) p.p.

Syn. *Cirsium maritimum*, (non MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929)

Nom. Jap. *Hama-azami*

Leg. Ipse, Mart. 15, 1930.

Distr. Kyûsyû, Tanegasima.

Note. The species is restricted to this island and the southern part of Kyûsyû.

Cirsium yakusimense, MASAMUNE, Prel. Rep. Veg. Yak. p. 126 (1929), et in Tokyo

Bot. Mag. XLIV. p. 219 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1224 (1931)

Nom. Jap. *Yakusima-azami*

Leg. Ipse, ca. Hananoegô, Jul. 31, 1927.

Distr. Endemica.

Note. Occurs in open lands from 700 m up to 1900 m above the sea level.

Ainsliaea, DC., Prodr. VII. p. 13 (1838); ENDL.,

Gen. Pl. n. 2928 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 493

(1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 342 (1889); LEMÉE,

Dict. Gen. Pl. Phan. I. p. 129 (1929)

Syn. *Diaspanthus*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 186 (1865)

Ainsliaea, POST et O. KUNTZE, Lex. Gen. Phaner. p. 15 (1903)

Ainsliaea acerifolia, SCH.-BIP., in Pollichia XVIII. p. 188 (1866); MIQ., in Ann. Mus.

Bot. Lugd. Bat. II. p. 187 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 264 (1876);

FORB. et HEMSL., Ind. Fl. Sin. I. p. 470 (1888); MATSUM., Ind. Pl. Jap. II. 2. p.

620 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1184 (1931)

Nom. Jap. *Momizi-haguma*

Leg. Ipse, Jul. 29, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, China.

Note. It grows in the crevices of granite rocks in the Pseudosasa Owatarii Association. It has its southern limit in this island.

Ainsliaea apiculata, SCHULTZ-BIP., in Pollichia XVIII. p. 188 (1866); MIQ., in Ann.

Mus. Bot. Lugd. Bat. II. p. 187 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 264

(1875); NAK., Fl. Kor. II. p. 50 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 620 (1912);

MASAMUNE, Prel. Rep. Veg. Yak. p. 125 (1929); MAK. et NEM., Fl. Jap. ed. 2. p.

1184 (1931)

Syn. *Ainsliaea affinis*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 187 (1866); FR. et

SAV., Enum. Pl. Jap. II. p. 264 (1876)

1. **scapifolia**, MASAMUNE, nov.

Scapus per totam longitudinem foliatus, foliis obovato-lanceolatis apice acutis apiculatis.

Nom. Jap. *Tôzaki-kikkô-haguma*

Leg. Ipse, Jun. 7, 1928.

Note. This endemic plant has leaves in its scape, and is found in the lauriculusilvae at about 700 m above the sea level.

var. multiscapa, MASAMUNE, var. nov.

Folia cum petiolis lanuginosa, 3 vel 5, palmato-dentata. Scapi 2-∞, saepe-ramosissimi.

Nom. Jap. *Tagô-kikkô-haguma*

Leg. Ipse, Kosugidani, ca. 600 m. Aug. 1928.

Distr. Endemica.

Note. The plant is more or less covered by woolly hairs. And the variety is restricted to this island.

var. *acerifolia*, MASAMUNE, var. nov.

Folia longe petiolata, petiolis ca. 3 cm longis lanuginosis, laminis 3- vel. 5- palmato-dentatis, supra saepe glabris, subtus vix lanuginosis.

Nom. Jap. *Momiziba-kikkô-haguma*

Leg. Ipse, Jul. 29, 1924.

Distr. Endemica.

Note. The variety is found in the laurisilvae, and is restricted to this island.

var. *typica*, MASAMUNE, var. nov.

Folia vix 3-5 undulato-dentata, saepe glabriuscula.

Nom. Jap. *Kikkô-haguma*

Leg. Ipse, Jul. 27, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea.

Note. Grows as undergrowth in the lauri-aciculisilvae.

var. *ovatifolia*, MASAMUNE, var. nov.

Folia ovata, basi cuneata vel rotundato-cuneata apice acuta apiculata supra glabriuscula, subtus lanuginoso-hirsuta, petiolis ca. 3-5 cm longis lanuginoso-hirsutis.

Nom. Jap. *Tamagoba-kikkô-haguma*

Leg. Ipse, Kosugidani, 1928.

Note. The endemic variety is also found in the lauri-aciculisilvae as undergrowth.

var. *rotundifolia*, MASAMUNE, var. nov.

Folia rotundata, hirsuta, apiculata basi cordata.

Nom. Jap. *Maruba-kikkô-haguma*

Leg. Ipse, Jul. 25, 1924.

Note. The endemic variety is also found in the lauri-aciculisilvae as undergrowth.

Ainsliaea Faurieana, BEAUVERD, in Bull. Soc. Bot. Genève Sér. II. 1. p. 381 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 125 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1184 (1931)

Syn. *Ainsliaea linearis*, MAK., in Tokyo Bot. Mag. XXIII. p. 250 (1909)

Nom. Jap. *Hosoba-haguma*

Leg. Ipse, Kosugidani, Sept. 3, 1926.

Distr. Endemica.

Note. The species is found on granite rocks scattered in river beds from the sea level up to about 900 m. It is restricted to this island.

Lampsana, (*Lapsana*) [LINN., Meth. Sex. (1737), Syst. ed. 2. p. 23 (1740) p.p.] et Sp. Pl. ed. 1. p. 811 (1753); ENDL., Gen. Pl. n. 2967 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 509 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 357 (1893); LEMÉE, Dict. Gen. Pl. Phan. III. p. 949 (1931)

Lampsana apogonoides, MAXIM., in Mém. Biolog. IX. p. 20 (1873); FR. et SAV., Enum. Pl. Jap. I. p. 266 (1875); FR., Pl. David. I. p. 185 (1884); FORB. et HEMS., Ind.

Fl. Sin. I. p. 474 (1888) ; MATSUM., Ind. Pl. Jap. II. 2. p. 655 (1912) ; MORI, Enum. Pl. Cor. p. 361 (1922) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1247 (1931)

Nom. Jap. *Ko-onitabirako*

Leg. Ipse, Onoaida.

Dist. Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, China.

Note. Occurs in waste land at low altitudes, and is commonly distributed throughout Japan.

Picris, [LINN., Syst. ed. 1 (1735¹), et Gen. Pl. ed.

1. p. 237 (1737)] et Sp. Pl. ed. 1. p. 792 (1753) ; ENDL., Gen. Pl. n. 2999 (1836-40) ; DC., Prodr. VII. p. 128 (1839) ; BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 511 (1873) ; HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 364 (1893)

Syn. *Closirospermum*, NECK., Elem. I. p. 54 (1790)

Choeroseris, LINK, Handb. I. p. 798 (1829)

Picris hieracioides, LINN. var. *japonica*, REGEL., Pl. Radd. Monp. III. iv. p. 25 (1861) ; DIELS, Fl. Centr. Chin. p. 630 (1901) ; YABE, in Tokyo Bot. Mag. XVIII. p. 104 (1904) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1255 (1931)

Syn. *Picris japonica*, THUNB., Fl. Jap. p. 299 (1784¹) ; FR. et SAV., Enum. Pl. Jap. I. p. 268 (1875) ; MIY., Fl. Kuril. p. 245 (1890) ; KOM., Fl. Mansh. III. p. 766 (1907) ; NAK., Fl. Kor. II. p. 58 (1911)

Picris hieracioides, MATSUM., Ind. Pl. Jap. II. 2. p. 660 (1912)

Nom. Jap. *Kôzôrina*

Leg. Ipse, Ambô.

Dist. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea, Manchuria, China.

Note. Occurs in open lowlands, in waste or cultivated lands.

Taraxacum, [LINN., Syst. ed. 1 (1735¹) ; HALL.,

Enum. Stirp. Helvet. II. p. 739 (1742¹) ; WIGGERS, Prim. Fl. Holast. p. 56 (1780) ; JUSS., Gen. Pl. p. 169 (1789) ; DC., in Lam. et DC. Fl. Fr. ed. 3. IV. p. 44, V. p. 450 (1815), et Prodr. VII. p. 145 (1833) ; ENDL., Gen. Pl. n. 3010 (1836-40) ; BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 522 (1873¹) ; HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 370 (1893)

Syn. *Dens Leonis*, [TOURN., ex RUPP. Fl. Jen. ed. 3. p. 197 (1745)]

Leontodon, ADANS., Fam. II. p. 112 (1763)

Taraxacum albidum, DAHL., in Act. Hort. Berg. IV. p. 11. t. 2, ff. 9-15 (1907¹), et in Fedd. Rep. Nov. VII. p. 135 (1909) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 129 (1929) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1272 (1931)

Syn. *Taraxacum officinale*, var. *albiflorum*, MAK., in List Seeds Bot. Gard. Imp. Univ. Tokyo p. 20 (1895), et in Tokyo Bot. Mag. VII. p. 104 (1893) ; NAK., Fl. Kor. II. p. 52 (1911)

Taraxacum mongolicum, HANDEL-MAZ., Monogr. Tarax. p. 67 (1907), et in Ostr. Bot. Zeit. LXX. p. 264 (1929)

Taraxacum albiflorum, KOIDZ., in Tokyo Bot. Mag. XXXVII. p. 94 (1923)

Nom. Jap. *Srohana-tanpopo*

Leg. Ipse, Issô.

Dist. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, China.

Note. Occurs in cultivated lands.

Sonchus, [TOURN., ex LINN. Syst. ed. 1 (1735); et Gen. Pl. ed. 1. p. 238 (1737)] et Sp. Pl. ed. 1. p. 793 (1753); ENDL., Gen. Pl. n. 3003 (1836-40); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 528 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 371 (1893)

Sonchus oleraceus, LINN., Sp. Pl. ed. 1. p. 794 (1753); THUNB., Fl. Jap. p. 299 (1784); BENTH., Fl. Hongk. p. 194 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 191 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 272 (1875); HOOK. f., Fl. Brit. Ind. III. p. 414 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 487 (1888); HAY., Comp. Formos. p. 41 (1904); MATSUM., Ind. Pl. Jap. II. 2. p. 667 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 151 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 197 (1918); MERR., Enum. Philipp. Pl. III. p. 621 (1923); NAK., Fl. Sylv. Kor. XIV. p. 123 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 1270 (1931)

Nom. Jap. Nagesi

Leg. Ispe, Jun. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. Occurs by the roadside in cultivated or waste lands.

Mycelis, CASS., in Dict. Sc. Nat. XXXIII. p. 483

1824)

Syn. *Lactuca*, Sect. *Mycelis*, DC., Prodr. VII. p. 139 (1838)

Mycelis sororia, NAK., in Tokyo Bot. Mag. XXXVI. p. 24 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929)

Syn. *Lactuca sororia*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 189 (1866); MAXIM., in Mém. Biolog. IX. p. 358 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 268 (1875); FORB. et HEMSL., Ind. Fl. Sin. I. p. 484 (1888); MATSUM., Ind. Pl. Jap. II. 2. p. 655 (1912); YAMAZUTA, List Manch. Pl. p. 279 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1246 (1931)

Nom. Jap. Murasaki-nigana

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Manchuria.

Note. Grows in the laurisilvae and especially on the edges of forests.

Ixeris, CASS., in Dict. Sc. Nat. XXIV. p. 49 (1822);

DC., Prodr. VII. p. 151 (1833); LEMÉE, Dict. Gen. Pl. Phan. III. p. 792 (1931)

Ixeris chinensis, (THUNB.) NAK., in Tokyo Bot. Mag. XXXIV. p. 152 (1920), et Fl. Sylv. Kor. XIV. p. 113 (1923)

Syn. *Prenanthes chinensis*, THUNB., Fl. Jap. p. 301 (1784); WILLD., Sp. Pl. III. p. 1533 (1800); SPRENG., Syst. Veg. III. p. 654 (1826)

Chondrilla chinensis, POIR., Encycl. Suppl. II. p. 331 (1823)

Youngia chinensis, DC., Prodr. VII. p. 194 (1833)

Prenanthes versicolor, TURCZ., ex DC. Prodr. VII. p. 151 (1833); FISCH., in Bung. Enum. Pl. Chin. Bor. p. 40 (1831)

Crepis versicolor, FISCH., ex DC. Prodr. VII. p. 151 (1833)

Ixeris versicolor, DC., Prodr. VII. p. 151 (1833) p.p.; MAXIM., Prim. Fl. Amur. pp. 180, 473 (1859); FR. et SAV., Enum. Pl. Jap. I. p. 269 (1875)

Lactuca versicolor, SCHULTZ-BIP., Herb. Pl. Radd. III. 4. p. 39 (1862); MAXIM., in Mém. Biolog. IX. p. 362 (1874); FR., Pl. David. I. p. 188 (1884); FORB. et HEMSL., Ind. Fl. Sin. I. p. 485 (1888)

Lactuca chinensis, MAK., in Tokyo Bot. Mag. XVII. p. 89 (1903); MAK. et NEM., Fl. Jap. ed. 2. p. 1241 (1931)

Nom. Jap. *Takasagob*

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Korea.

Note. Occurs in open grassland.

Ixeris dentata, (THUNB.) NAK., Fl. Sylv. Kor. XIV. p. 114 (1923)

Syn. *Prenanthes dentata*, THUNB., Fl. Jap. p. 301 (1784)

Ixeris Thunbergii, A. GRAY, Pl. Jap. p. 397 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 191 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 270 (1875)

Lactuca Thunbergii, MAXIM., in Mém. Biolog. IX. p. 361 (1874); FORB. et HEMSLE., Ind. Fl. Sin. I. p. 484 (1888); MIY., Fl. Kuril. p. 245 (1890)

Lactuca dentata, var. *flaviflora*, subv. *Thunbergii*, MAK., in Tokyo Bot. Mag. XXIV. p. 75 (1910)

Lactuca dentata, MAK. var. *Thunbergii*, MAK., in Tokyo Bot. Mag. XXVII. p. 29 (1913); MATSUM., Ind. Pl. Jap. II. 2. p. 653 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1242 (1931)

Nom. Jap. *Nigana*

Leg. Ipse, Mart. 16, 1930.

Distr. Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. Grows in cultivated lands or in waste places.

Ixeris repens, A. GRAY, Pl. Jap. p. 397 (1856); FR. et SAV., Enum. Pl. I. p. 271 (1875); NAK., Fl. Sylv. Kor. XIV. p. 114 (1923)

Syn. *Lactuca repens*, BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 526 (1873); MAXIM., in Mém. Biolog. IX. p. 364 (1874); MIY., Fl. Kuril. p. 245 (1890); HAY., Comp. Formos. p. 40 (1904); KOM., Fl. Mansh. III. p. 785 (1907); NAK., Fl. Kor. II. p. 54 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 150 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 198 (1918); MERR., Enum. Hainan Pl. p. 186 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1245 (1931)

Lactuca brachyrhyncha, HAY., Ic. Pl. Formos. VIII. p. 74 (1919)

Nom. Jap. *Hama-nigana*

Leg. Ipse, Aug. 12, 1928.

Distr. Kamtschatka, Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The psammophyte grows on sandy beaches.

Ixeris stenophylla, (MAK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 28 (1929)

Syn. *Lactuca stenophylla*, MAK., in Journ. Jap. Bot. IV. p. 10 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 1246 (1931)

Lactuca dentata, var. *lanceolata*, MAK., in Tokyo Bot. Mag. XXVII. p. 30 (1913)

Nom. Jap. *Yanagi-nigana*

Leg. Ipse, Jul. 23, 1927.

Distr. Endemica.

Note. Occurs in the high lands of the Pseudosasa Owatarii Association.

Ixeris stolonifera, A. GRAY, Pl. Jap. p. 396 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 191 (1866); FR. et SAV., Enum. Pl. Jap. I. p. 271 (1875); NAK., Fl.

Sylv. Kor. XIV. p. 114 (1923), et in Bull. Biogeogr. Soc. Jap. I. p. 264 (1930)

Syn. *Lactuca stolonifera*, BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 526 (1873); MAXIM., in Mél. Biolog. IX. p. 364 (1874); NAK., Fl. Kor. II. p. 54 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 655 (1912); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 150 (1912); MIURA, List Pl. Manch. & Mong. p. 357 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1246 (1931)

Nom. Jap. *Iwa-nigana*

Leg. Ipse, Hirauti, April. 2, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Bonins, Korea, Manchuria, China.

Note. Grows in open and dry lands, or in waste lands.

Paraixeris, NAK., in Tokyo Bot. Mag. XXXIV. p.

155 (1920)

Paraixeris denticulata, NAK., in Tokyo Bot. Mag. XXXIV. p. 156 (1920); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929)

Syn. *Prenanthes denticulata*, HOUTTUYN., Nat. Hist. XXVIII. p. 335, t. 66, f. 4 (1779), et Syst. IV. p. 50, t. 66, f. 4 (1783)

Prenanthes hastata, THUNB., Fl. Jap. p. 301 (1784)

Ixeris ramosissima, GRAY, in Memoir. Am. Acad. VI. p. 337 (1859); BENTH., Fl. Hongk. p. 193 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 190 (1866)

Youngia chrysantha, MAXIM., Prim. Fl. Amur. p. 181 (1859)

Lactuca denticulata, MAXIM., in Mél. Biolog. IX. p. 359 (1874); MATSUM., Ind. Pl. Jap. II. 2. p. 653 (1912); FORB. et HEMSL., Ind. Fl. Sin. I. p. 480 (1888); KOM., Fl. Mansh. III. p. 780 (1907); NAK., Fl. Kor. II. p. 55 (1911); MATSUM., Ind. Pl. Jap. II. 2. p. 653 (1912)

Lactuca denticulata, *a typica*, MAXIM., in Mél. Biolog. IX. p. 359 (1874); PALIB., Consp. Fl. Kor. I. p. 123 (1893); MAK. et NEM., Fl. Jap. ed. 2. p. 1242 (1931)

Paraixeris denticulata, *f. typica*, NAK., in Tokyo Bot. Mag. XXXIV. p. 157 (1920)

Nom. Jap. *Yakusisô*

Leg. Ipse, Jun. 6, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea, Manchuria, China.

Note. Grows by the roadside or in waste lands.

Lactuca, [TOURN., ex LINN. ed. 1 (1735), et Gen.

Pl. ed. 1. p. 240 (1737)] et Sp. Pl. ed. 1. p. 795 (1753); ENDL., Gen. Pl. n. 3008 (1836-40) p.p.; DC., Prodr. VII. p. 133 (1839); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. p. 524 (1873) p.p.; HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 371 (1893) p.p.; LEMÉE, Dict. Gen. Pl. Phan. III. p. 914 (1931)

Syn. *Micranchenia*, FROELICH, in DC. Prodr. VII. p. 239 (1838)

Lactuca laciniata, MAK., in Tokyo Bot. Mag. XVII. p. 89 (1903); MATSUM., Ind. Pl. Jap. II. 2. p. 654 (1912); NAK., Fl. Sylv. Kor. XIV. p. 114 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 1243 (1931)

Syn. *Prenanthes laciniata*, HOUTT., Handb. X. p. 381, t. 66, f. 1 (1779)

Prenanthes squarrosa, THUNB., Fl. Jap. p. 303 (1784)

Lactuca brevirostris, CHAMP., in Hook. Journ. Bot. Kew Miscel. IV. p. 237 (1852); BENTH., Fl. Hongk. p. 192 (1861); HOOK. f., Fl. Brit. Ind. III. p.

405 (1881); FORB. et HEMSL., Ind. Fl. Sin. I. p. 479 (1888); HAY., Comp. Formos. p. 33 (1904); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 150 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 197 (1918)

Lactuca amurens, REGEL, Ind. Sem. Hort. Peterop. p. 42 (1857); MAXIM., Prim. Amur. pp. 178, et 473 (1895)

Lactuca squarrosa, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 189 (1866); MAXIM., in Mél. Biolog. IX. p. 353 (1874); FR., Pl. David. I. p. 187 (1884); KOM., Fl. Mansh. III. p. 778 (1907); NAK., Fl. Kor. II. p. 54 (1911)

Lactuca indica, (non LINN.) MERR., Enum. Philipp. Pl. III. p. 621 (1923), et Enum. Hainan Pl. p. 186 (1927); GAGNEPAIN, in LECOMTE, Fl. Ind. Chin. III. 5. p. 654 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 128 (1929)

Nom. Jap. *Akino-nogesi*

Leg. Ipse, Hunayuki, Jul. 24, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. Grows by the roadside or in cultivated lands.

Crepis, [VAILL, ex LINN. Gen. Pl. ed. 1. p. 240 (1737)] et Sp. Pl. ed. 1. p. 805 (1753); ENDL., Gen. Pl. n. 3022 (1836-40); DC., Prodr. VII. p. 160 (1838); BENTH., in BENTH. et HOOK. f. Gen. Pl. II. pp. 513 et 515 (1873); HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. v. p. 373 (1893) p.p.; LEMÉE, Dict. Gen. Pl. Phan. II. p. 369 (1930)

Syn. *Hieracioides*, [MOEHR., Hort. Priv. p. 48 (1736)]; RUPR., Fl. Ingr. p. 624 (1860) *Crenamum*, ADANS., Fam. II. p. 112 (1763)

Hieracioides, O. KUNTZE, Rev. Gen. Pl. I. p. 344 (1891)

Crepis japonica, BENTH., Fl. Hongk. p. 194 (1861), et Fl. Austral. III. p. 679 (1866); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 190 (1866); MAXIM., in Mél. Biolog. IX. p. 346 (1874); FR. et SAV., Enum. Pl. Jap. I. p. 271 (1875); HOOK. f., Fl. Brit. Ind. III. p. 395 (1881); HEMSL., in Voy. Chall. I. 1. p. 46 (1881); FR., Pl. David. I. p. 185 (1884); HILLEBRAND, Fl. Hawai. Isl. p. 233 (1888); FORB. et HEMSL., Ind. Fl. Sin. I. p. 475 (1888); DIELS, Fl. Cent. Chin. p. 632 (1901); NAK., Fl. Kor. II. p. 57 (1911), et in Biogeogr. Soc. Jap. I. p. 264 (1930); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 150 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 198 (1918); GAGNEPAIN, in LECOMTE Fl. Ind. Chin. III. 5. p. 642 (1924); MERR., Enum. Hainan Pl. p. 186 (1927); RIDLEY, Fl. Malay II. p. 197 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 127 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1227 (1931)

Syn. *Prenanthes japonica*, LINN., Mant. I. p. 107 (1767); THUNB., Fl. Jap. p. 302 (1784); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 266 (1836-40)

Youngia japonica, DC., Prodr. VII. p. 194 (1839)

Youngia Thunbergiana, DC., Prodr. VII. p. 192 (1839)

Crepis lyrata, BENTH., ex MAXIM. in Mél. Biolog. IX. p. 346 (1874)

Nom. Jap. *Oni-tabirako*

Leg. Ipse, Aug. 29, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Indo-China, Malay, India, Australia.

Note. It is a widely distributed species, and in this island it is often found in the low lands.

Crepidiastrum, NAK., in Tokyo Bot. Mag. XXXIV. p. 147 (1920); LEMÉE, Dict. Gen. Pl. Phan. II. p. 368 (1930)

[illegible]

| Names of Plants | Regions | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|------------|-------------|--------|--------|-------|-------------------------|-----------|-------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Ryūkyūs | | Kyūsū | | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Ussuri | China |
| | | | | Okinawa | Amami-Ōshima | Tanegasima | Kyūsū Prop. | | | | | | | | |
| | | | | | | | | | | | | | | | |
| <i>Eupatorium variabile</i> , MAK. | | | | + | + | + | | | | | | | | | |
| <i>Solidago Virgaurea</i> , LINN. | | | + | + | + | + | + | + | + | + | + | + | | | + |
| <i>Solidago yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | |
| <i>Dichrocephala latifolia</i> , DC. | + | | + | + | + | + | + | + | + | | | | | + | |
| <i>Lagenophora Billardieri</i> , CASS. | + | | + | + | + | | + | | + | | | | | + | |
| <i>Rhynchospermum verticillatum</i> , REINW. . . | | | + | | + | + | + | + | + | + | | | | + | |
| <i>Myriactis japonensis</i> , KOIDZ. | | | | | | | | | | | | | | | |
| <i>Aster indicus</i> , LINN. | | + | + | + | + | + | + | + | + | + | | | | + | |
| <i>Aster Maackii</i> , REGEL | | | | | | | + | | | | | | | | |
| <i>Gonyza japonica</i> , LESS. | + | | + | + | + | + | + | + | + | | | | | + | |
| <i>Blumea fruticosa</i> , KOIDZ. | | | | + | + | | | | | | | | | | |
| <i>Anaphalis yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | |
| <i>Gnaphalium japonicum</i> , THUNB. | + | | + | + | + | | + | + | + | + | | | | + | |
| <i>Gnaphalium luteo-album</i> , LINN. var. <i>multiceps</i> , HOOK. f. | | | + | + | + | + | + | + | + | + | + | + | | + | |
| <i>Carpesium abrotanoides</i> , LINN. var. <i>Thunbergianum</i> , MAK. | | | + | | | | + | + | + | + | + | + | | | |
| <i>Carpesium cernuum</i> , LINN. | + | | | | + | | + | + | + | + | | | | + | + |
| <i>Carpesium rosulatum</i> , MIQ. | | | | | | | + | + | + | + | | | | | |
| <i>Siegesbeckia orientalis</i> , LINN. | + | | + | + | + | + | + | | + | + | | | | + | |
| <i>Siegesbeckia pubescens</i> , MAK. | | | | + | | | + | + | + | | | | | | |
| <i>Eclipta alba</i> , HASSK. | + | + | + | + | + | + | + | + | + | + | | | | + | + |
| <i>Wedelia biflora</i> , DC. | + | | + | + | + | + | + | + | + | | | | | + | + |
| <i>Wedelia calendulacea</i> , LESS. | | | + | + | + | + | + | + | + | | | | | + | + |
| <i>Wedelia chinensis</i> , MERR. | + | + | + | + | + | | + | + | + | | | | | + | + |
| <i>W. c.</i> var. <i>robusta</i> , MASAMUNE | | | | | | | | + | | | | | | | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---|---|
| <i>Bidens pilosa</i> , LINN. | + | + | + | + | + | + | + | + | + | + | | | | | | | | + | |
| <i>Chrysanthemum indicum</i> , LINN. | | | + | | | | | | | + | + | + | + | | | | | + | + |
| <i>Chrysanthemum japonense</i> , NAK. | | | | | | + | | | | + | + | + | | | | | | | |
| <i>Centipeda minima</i> , A. BR. & ASCHERS. | + | + | + | + | + | + | + | + | + | + | + | + | + | | | | | + | + |
| <i>Artemisia japonica</i> , THUNB. | + | + | + | + | + | + | + | + | + | + | + | + | + | | | | | + | + |
| <i>Artemisia lavandulaefolia</i> , DC. | | | | | | | | | | + | + | + | + | | | | | + | + |
| <i>Artemisia vulgaris</i> , LINN. var. <i>indica</i> , MAXIM. | + | + | + | + | + | + | + | + | + | + | + | + | + | | | | | + | + |
| <i>Petasites japonicus</i> , MIQ. var. <i>typicus</i> , MAK. | | | | | | | | | | + | + | + | + | + | + | + | | | + |
| <i>Gynura bicolor</i> , DC. | | + | + | + | + | | | | | | | | | | | | | | |
| <i>Cacalia Krameri</i> , MATSUM. | | | | | | | | | | + | | + | | | | | | | |
| <i>Cacalia kiusiana</i> , MAK. | | | | | | | | | | + | | | | | | | | | |
| <i>Cacalia yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>Senecio sonchifolia</i> , DC. | | + | + | + | + | + | + | + | + | | | | | | | | | | + |
| <i>Ligularia hiberniflora</i> , MAK. | | | | | | | | + | | | | | | | | | | | |
| <i>Ligularia tussilaginea</i> , MAK. | | + | + | + | + | + | + | + | + | + | | | | | | | | | + |
| <i>Saussurea yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>Hemistepta carthamoides</i> , O. KUNTZE | | + | + | + | + | + | + | + | + | + | + | + | | | | | | + | + |
| <i>Cirsium japonicum</i> , DC. var. <i>typicum</i> , NAK. | | | | | | | | | | + | + | + | + | | | | | | |
| <i>Cirsium brevicaule</i> , A. GRAY | | | | | | | | | | + | + | | | | | | | | |
| <i>Cirsium yakusimense</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>Ainsliaea acerifolia</i> , SCH.-BIP. | | | | | | | | | | | + | + | + | | | | | | + |
| <i>Ainsliaea apiculata</i> , SCH.-BIP. l. <i>scapifolia</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>A. a.</i> var. <i>multiscapa</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>A. a.</i> var. <i>acerifolia</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>A. a.</i> var. <i>typica</i> , MASAMUNE | | | | | | | | | | + | + | + | + | + | + | | | | |
| <i>A. a.</i> var. <i>ovatifolia</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>A. a.</i> var. <i>rotundifolia</i> , MASAMUNE | | | | | | | | | | | | | | | | | | | |
| <i>Ainsliaea Faurieana</i> , BEAUV. | | | | | | | | | | | | | | | | | | | |
| <i>Lampsana apogonoides</i> , MAXIM. | | | | | | | | | | + | + | + | + | + | + | | | | + |
| <i>Picris hieracioides</i> , LINN. var. <i>japonica</i> , REGEL. | | | | + | + | + | + | + | + | + | + | + | + | + | + | + | | + | + |
| <i>Taraxacum albidum</i> , DAHL. | | | | + | + | | | | | + | + | + | + | + | | | | | + |
| <i>Sonchus oleraceus</i> , LINN. | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | | | | + |
| <i>Mycelis sororia</i> , NAK. | | | | | | | | | | | + | + | + | | | | | | + |

West Indian region: Including all the West Indian Islands in the widest sense.

Andine region: Including West tropical South America.

Brazilian region: Including East tropical South America.

Chilian region: Including extra tropical South America.

The rest of the world is divided thus:

Eur-Asiatic region: Including Northern and Central Europe, Siberia and the eastern parts of subtropical Asia.

Mediterranean region: Including South Europe, North Africa and western parts of subtropical Asia.

Tropical Asiatic region: Including India south of the Himalayas, the East Indies and the Malay Archipelago.

Tropical African region.

South African region: Including extra-tropical South Africa.

Australian region: Including the Australian islands "

Japan is situated in SMALL's Eurasiatic region and at the same time it has some feature of his Tropical Asiatic region. In this respect I think the Japanese territory should be divided into two sub-regions, the northern sub-region which extends from Yakusima northward to Yezo, the southern Kuriles and Saghalien, and the southern sub-region extending from Amami-Ôsima southward to Formosa. And though the fact that the island of Yakusima belongs to the northern sub-region in respect of the distribution of the plants of the *Compositae* is clearly shown by the above table, there are in it a few elements of the southern sub-region like *Myriactis* and *Blumea*. Therefore it may be allowed to apply WATASE's Line in zoogeography also to synanthaeogeography.

MONOCOTYLEDONES

Alismaceae

Alismaceae, DC., in LAM. et DC. Fl. Fr. ed. 3. III. p. 181 (1805)

Sagittaria, [RUPP., ex LINN. Syst. ed. 1 (1735)]
et Sp. Pl. ed. 1. p. 993 (1753); ENDL., Gen. Pl. n. 1042 (1836-40); BENTH. et

Hydrocharitaceae

Hydrocharitaceae, ASCHERS., Fl. Prov. Brandenburg. I. p. 647 1864, et in Linn.
XXXXV, p. 158 (1867)

Blyxa, NOR., ex THOUARS. Gen. Nov. Madagascar.
p. 4 (1806); ENDL., Gen. Pl. n. 1210 (1836-40); BENTH. et HOOK. f., Gen. Pl. III.
p. 451 (1880); ASCHERSON u. GURKE, in ENGL. u. PRANT. Nat. Pfl.-fam. II. i. p.
252 (1889); LEMÉE, Dict. Gen. Pl. Phan. I. p. 600 (1929)

Syn. *Saivala*, JONES, in As. Res. IV. p. 275 (1799)

Diplosiphon, DECNE., in Jacquem. Voy. Bot. p. 166, t. 167 (1844)

Hydrotrophus, C. B. CLARKE, in Journ. Linn. Soc. XIV. p. 8. t. 1 (1873)

Blyxa Shimadai, HAY., Ic. Pl. Formos. V. p. 209 (1915); MASAMUNE, Prel. Rep. Veg. Yak. p. 40 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1292 1931)

Nom. Jap. *Tanwan-subuta*

Leg. Ipse, Onoaida, Aug. 21, 1928.

Distr. Okinawa, Taiwan.

Note. It occurs in rice fields on rather rare occasions, and is not yet reported in regions further north of this island, but there is a grave doubt whether the species is one and the same with *B. certosperma* common in Japan proper.†

| Name of Plant | Regions | |
|---------------|-------------------------------|---------|
| | Philippines | |
| | Bonins | |
| | Taiwan | |
| | Okinawa | Ryūkyūs |
| | Amami-Ōshima | |
| | Tanegashima | |
| | Kyūsū Prop. | Kyūsū |
| | Sikoku | |
| | Honsyū | |
| | Korea | |
| | Yezo & Southern Kuriles | |
| | Saghalien | |
| | Northern Kuriles & Kamtchatka | |
| | Manchuria, Amur & Ussuri | |
| | China | |

| | | |
|------------------------------|---|---|
| Blyxa Shimadai, HAY. | + | + |
|------------------------------|---|---|

Since the only representative of the family in this island has its northern limit here, the island is closely related to the southern lands.

Triuridaceae

Triuridaceae, LINDL., Veg. Kingd. p. 213 (1847)

Sciaphila, BL., Bijdr. p. 514 1826 ; ENDL., Gen. Pl. n. 1878 (1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 1002 (1883 ; ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. i. p. 237 (1889)

Sciaphila japonica, MAK., in Tokyo Bot. Mag. XVI. p. 211 (1902), et XIX. p. 141 (1905); MATSUM., Ind. Pl. Jap. II. 1. p. 31 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 40 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1294 (1931)

Nom. Jap. Hongosô

Leg. Ipse, Mugio, Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa.

Note. The species is found on humus ground in the lauri-aciculisilvae, and is restricted to southern Japan, but does not occur in Formosa.

| Name of Plant | Regions | | | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|--------|-------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Anami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles |
| <i>Sciaphila japonica</i> , MAK. | | | | + | + | | + | | + | + | | |
| | | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | | China |

Triuridaceae has only one genus in Japan, and one of the species of this family appears in Yakusima. As it is found in both southern and northern regions beyond Yakusima, I cannot deduce any special affinity between the island and the neighbouring districts so far as the distribution of the plants of this family is concerned.

Gramineae*

Gramineae, B. JUSS., in Hort. Trianon et ex JUSS. Gen. p. LCIV. p. 28 (1789); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 1. (1837)

Pseudosasa, MAK., in Journ. Jap. Bot. II. p. 15 (1920)

Pseudosasa japonica, MAK., in Journ. Jap. Bot. II. p. 15 (1920); MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1389 (1931)

Syn. *Arundinaria japonica*, SIEB. et ZUCC., ex STEUD. Syn. Gram. p. 334 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 284 (1866); A. GRAY, Pl. Jap. p. 323 (1856); MAK., in Tokyo Bot. Mag. XIV. p. 80 (1900)

* In arranging the genera of this family I chiefly followed the system of Dr. M. HONDA as given in his work "Monographia Poacearum Japonicarum Bambusoideis exclusis." (1930,

Sasa japonica, MAK., in Tokyo Bot. Mag. XXVI. p. 13, f. 2 (1912)

Nom. Jap. *Yadake*

Leg. Ipse, Aug. 8, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima.

Note. It occurs in the laurisilvae, and has its southern limit in this island.

Pseudosasa Owatarii, MAK., in Journ. Jap. Bot. II. p. 16 (1920 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1389 1931

Syn. *Arundinaria Owatarii*, MAK., in Tokyo Bot. Mag. XXI. p. 16 (1907

Sasa Owatarii, MAK., in Tokyo Bot. Mag. XXVI. p. 14 (1912

Nom. Jap. *Yakusima-dake*

Leg. Ipse, Kosugidani, Jul. 10, 1928.

Distr. Endemica.

Note. It grows from about 500 m up to the highest point of the island on various grounds, but it flourishes most abundantly in the higher parts of the island and forms a consociation there.

Pleioloblastus, NAK., in Journ. Arnold Arb. VI.

p. 146 1925

Syn. *Arundinaria*, MUNRO, in Trans. Linn. Soc. XXVI. p. 13 1868 p.p.; BENTH. et HOOK. f., Gen. Pl. III. p. 1207 1883 p.p.; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 93 1889 p.p.

Thamnocalamus, MUNRO, in Trans. Linn. Soc. XXVI. p. 33 1868 p.p.

Pleioloblastus Hindsii, NAK., in Journ. Arnold Arb. VI. p. 146 (1925 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 45 1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1377 1931

Syn. *Arundinaria Hindsii*, MUNRO, Monogr. Bamb. p. 31 (1866 ; MAK., in Tokyo Bot. Mag. XIV. p. (63 1900 ; MATSUM., Ind. Pl. Jap. II. 1. p. 88 (1905 ; SHIRASAWA, Ic. For. Tree. Jap. II. t. 5, ff. 1-3 1912 ; NOHL., in Mitt. Deutsch. Dendr. Ges. XXIV. p. 100 1915

Thamnocalamus Hindsii, CAM., Monogr. p. 52, Pl. 25. f. A (1913

Nom. Jap. *Kanzantiku*

Leg. Ipse, April. 4, 1927.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Kutinoerabu, Okinawa.

Note. The bamboo grows near the sea level and forms a consociation. The species is rather widely distributed in South Japan.

Pleioloblastus Masamuneanus, MAK., in Journ. Jap. Bot. VI. p. 5 (1929 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1378 (1931

Nom. Jap. *Kuriozasa*

Leg. Ipse, Kurio, Mart. 1923, et Jul. 4, 1928.

Distr. Endemica.

Note. I found this species as a pure association in the village of Kurio. I doubt whether the species is not an introduced one.

Agropyron, (*Agropyrum*) J. GAERTN., in Nov.

Comm. Acad. Sc. Peterop. XIV. pt. 1. p. 539 (1770) ; BENTH., in BENTH. et HOOK. f. Gen. Pl. III. p. 1202 (1883) ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. pp. 76, 78 (1887) ; LEMÉE, Dict. Gen. Pl. Phan. I. p. 125 (1929)

Syn. *Elytrigia*, DESVAUX, in Nouv. Bull. Soc. Philom. II. p. 190 (1810), et in Journ. Bot. I. p. 74 (1813)

Agropyron semicostatum, NEES, ex STUED. Syn. Glum. I. p. 346 (1855¹); BENTH. et HOOK. f., Gen. Pl. III. p. 1203 (1883); MASAMUNE, Prel. Rep. Veg. Yak. p. 40 (1929); HONDA, Monog. Poac. Jap. Bamb. excl. p. 29 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1303 (1931)

Syn. *Triticum semicostatum*, NEES, apud STEUD. Syn. Glum. I. p. 346 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 287 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 185 (1876)

Triticum cilare, f. *semicostatum*, KORSHINSKY, in Act. Hort. Petrop. XII. p. 415 (1892)

Agropyrum semicostatum, NEES var. *transiens*, HACK., in Bull. Herb. Boiss. sér. II. iii. p. 507 (1903); NAK., Fl. Kor. II. p. 376 (1911)

Nom. Jap. *Kamozi-gusa*

Leg. Ipse, Jul. 19, 1928.

Distr. Yezo, Honsyû, Sîkoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Korea.

Note. Occurs in waste or cultivated lands or by the roadside; common in the eastern hemisphere.

Brachypodium, BEAUV., Ess. Agrost. pp. 100, et 155 (1812) p.p.; ENDL., Gen. Pl. nn. 899b et 913c (1836-40); BENTH. et HOOK. f., Gen. Pl. III. pp. 1093, 1201 (1883¹); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 76 (1887); HITCHCOCK, in U. S. Dept. Agric. Bull. 772, p. 34 1920; LEMÉE, Dict. Gen. Pl. Phan. I. p. 656 (1929)

Syn. *Trachynia*, LINK, Hort. Berol. I. p. 40 (1827¹)

Brachypodium miserum, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 303 1925; MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 32 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 175 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1319 (1931¹)

Syn. *Festuca misera*, THUNB., Fl. Jap. p. 52 1784¹; WILLD., Sp. Pl. I. p. 427 1797; ROEM. et SCHULT., Syst. Veg. II. p. 732 (1817¹); SPRENGL., Syst. Veg. I. p. 356 (1825¹); KUNTH, Enum. Pl. I. p. 410 (1833); STEUD., Syn. Glum. I. p. 315 (1855)

Bromus conformis, STEUD., Syn. Glum. I. p. 323 (1855); A. GRAY, in Narr. Perr. Exped. p. 328 (1856)

Brachypodium silvaticum, (non ROEM. et SCHULT.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 286 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 185 (1876); HACK., in Bull. Herb. Boiss. VII. p. 714 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 43 (1905)

Brachypodium japonicum, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 286 1866; HACK., in Engl. Bot. Jahrb. VI. p. 50 (1885), et in Bull. Herb. Boiss. VII. p. 714 (1899), et p. 529 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 43 1905; NAK., in Tokyo Bot. Mag. XXXI. p. (104) 1917; MORI, Enum. Pl. Cor. p. 39 (1922)

Brachypodium japonicum, var. *minor*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 287 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 185 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 43 (1905)

Agropyrum miserum, TANAKA, in Bull. Sc. Fakult. Terkult. Kjuû Imp. Univ. I. p. 197 (1925)

Brachypodium sylvaticum, var. *miserum*, KOIDZ., Fl. Symb. Or. As. p. 80 (1930¹)

Nom. Jap. *Yama-kamozi-gusa*

Leg. Ipse, Aug. 31, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea.

Note. Often found on mountain passes which lie through the Pseudosasa Owatarii Association.

Festuca, LINN., Sp. Pl. p. 73 1753, et Gen. Pl. ed. 5. p. 33 1754; KUNTH, Enum. Pl. I. p. 391 (1833); ENDL., Gen. Pl. n. 899 (1836-40); STEUD., Syn. Glum. I. p. 301 1855; HACK., Monogr. Fest. Europ. p. 77 (1882), et in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 74 1887; BENTH. et HOOK. f., Gen. Pl. III. p. 1198 (1883); LEMÉE, Dict. Gen. Pl. Phan. III. p. 113 (1931)

Syn. *Vulpina*, GMELIN, Fl. Badens. I. p. 8 1805; HACK., in Flora p. 47 (1830)
Schedonorus, BEAUV., Ess. Agrost. p. 99 (1812)

Festuca ovina, LINN., Sp. Pl. ed. 1. p. 73 1753; KUNTH, Enum. Pl. I. p. 398 1833; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 282 1866; FR. et SAV., Enum. Pl. Jap. II. p. 181 (1876); HACK., Monogr. Fest. Europ. p. 82 1882, et in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 75, f. 87 1887; KOM., Fl. Mansh. I. p. 310 1901; MATSUM., Ind. Pl. Jap. II. 1. p. 56 (1905); HULT., Fl. Kamt. I. p. 144 1927; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 168 1931; MAK. et NEM., Fl. Jap. ed. 2. p. 1345 (1931)

Syn. *Bromus ovinus*, SCOPOLI, Fl. Carn. I. p. 77 1772

Festuca ovina, LINN. var. *vulgaris*, KOCH, Syn. ed. 1. p. 812 1837; HACK., Monogr. Fest. Europ. p. 86 1882, et in Bull. Herb. Boiss. VII. p. 713 1899; NAK., Fl. Kor. II. p. 373 1911; KOM., Fl. Fen. Kamtsch. I. p. 189 1927; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 48 1930

Nom. Jap. *Usinoko-gusa*

Leg. Ipse, 1928.

Distr. Kamtschatka, Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria.

Note. It occurs on dry ground, or on rocks, in mountain peaks. It is distributed nearly all over the northern hemisphere of temperate and arctic regions and Australia and New Zealand.

Festuca pauciflora, THUNB., Fl. Jap. p. 52 (1784); WILLD., Sp. Pl. I. p. 425 1797; KUNTH, Enum. Pl. I. p. 409 (1833); STEUDL., Syn. Glum. I. p. 315 1855; TURCZAN., Fl. Baical.-Dahur. I. p. 40 (1856); PRINTZ., Veg. Siberian, Mongoliana Front. p. 132 1921; MASAMUNE, Prel. Rep. Veg. Yak. p. 43 1929; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 55 1930

Syn. *Festuca remotiflora*, STEUDL., Syn. Glum. I. p. 315 1855; PILGER, in Engl. Bot. Jahrb. XXIX. p. 226 (1900)

Schenodorus remotiflorus, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 283 1866; FR. et SAV., Enum. Pl. Jap. II. p. 181 (1876; FR., Pl. David. I. p. 339 (1884), et II. p. 146 (1888)

Bromus pauciflorus, HACK., in Bull. Herb. Boiss. VII. p. 713 1899, et p. 506 1903; RENDLE, in FORB. et HESML. Ind. Fl. Sin. III. p. 430 1904; MATSUM., Ind. Pl. Jap. II. 1. p. 44 (1905); NAK., Fl. Kor. II. p. 374 1911; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 172 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1321 (1931)

Nom. Jap. *Kitune-gaya*

Leg. Ipse, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Korea.

Note. Occurs by the side of newly cutout roads and vertical surfaces made artificially or naturally by land slips, or on dry ground; very common in the Far East.

Poa, [LINN., Gen. ed. 1. p. 20 (1737.) et Sp. Pl. ed. 1. p. 67 (1753, et Gen. Pl. ed. 5. p. 31 (1754); KUNTH, Enum. Pl. I. p. 324 (1833) p.p.; ENDL., Gen. Pl. n. 876 (1836-40); STEUD., Syn. Glum. I. p. 249 (1855); BENTH., in BENTH. et HOOK. f. Gen. Pl. III. pp. 1093 et 1196 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 73 (1887); HITCHCOCK, in U. S. Dep. Agric. Bull. 772 p. 38 (1920); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 66 (1930)

Poa acroleuca, STEUD., Syn. Glum. I. p. 256 (1855); A. GRAY, Pl. Jap. p. 328 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 280 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 175 (1876); HACK., in Bull. Herb. Boiss. VII. p. 710 (1899). et 2 sér. III. p. 506 (1903); KOM., Fl. Mansh. I. p. 305 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 76 (1905); NAK., Fl. Kor. II. p. 370 (1911); HULT., Fl. Kamtsch. II. p. 136 (1927); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 69 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 163 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1381 (1931)

Syn. *Poa psilocaulis*, STEUD., Syn. Glum. I. p. 256 (1855)

Poa familiaris, STEUD., Syn. Glum. I. p. 426 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 280 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 175 (1876)

Poa acroleuca, var. *psilocaulis*, MUNRO, in MIQ. Ann. Mus. Bot. Lugd. Bat. II. p. 280 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 175 (1876)

Poa acroleuca, var. *purpurascens*, NAK., Rep. Veg. Quelp. p. 20 (1914)

Nom. Jap. *Mizo-itigo-tunagi*

Leg. Ipse, Kosugidani, Jun. 4, 1928.

Distr. Kamtschatka, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Korea, Manchuria, China.

Note. Occurs in the laurisilvae; widely distributed in Eastern Asia.

var. *spiciformis*, HONDA, in Tokyo Bot. Mag. XLI. pp. 640 et 667, (1927, et Monogr. Poac. Jap. Bamb. excl. p. 70 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1381 (1931)

Nom. Jap. *Yamamizoitigotunagi*

Leg. Ipse, Issô, Mart. 21, 1923.

Distr. Honsyû, Kyûsyû.

Note. The variety is restricted to the above cited regions, and is found in waste places on forest edges in the laurisilvae.

Poa annua, LINN., Sp. Pl. ed. 1. p. 68 (1753); WILLD., Sp. Pl. I. p. 390 (1797); KUNTH, Enum. Pl. I. p. 349 (1833), et Supp. I. p. 296 (1835); STEUD., Syn. Glum. I. p. 250 (1855); MIQ., Fl. Ind. Bat. III. p. 395 (1855), et in Ann. Mus. Bot. Lugd. Bat. II. p. 279 (1866); A. GRAY, Pl. Jap. p. 328 (1856); FR. et SAV., Enum. Pl. Jap. II. p. 174 (1876); BRITT. et BROWN, Ill. Fl. I. p. 201 (1896); STAFF., in HOOK. f. Fl. Brit. Ind. VII. p. 345 (1897); HACK., in Bull. Herb. Boiss. VII. p. 708 (1899); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 422 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 76 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 547 (1906); KOIDZ., Pl. Nakah. p. 21 (1910); TAKEDA, Fl. Sikot. p. 496 (1914); MIY. et MIYAKE, Fl. Sagh. p. 576 (1915); HAY., Ic. Pl. Formos. VII. p. 93 (1918); HITCHCOCK, in U. S. Dept. Agric. Bull. 772 p. 72 (1922); KOM., Fl. Pen. Kamtsch. I. p. 165 (1927);

HULT., Fl. Kamtsch. p. 124 (1927); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 71 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1382 (1931).

Nom. Jap. *Suzume-no-katabira*

Leg. Ipse, Mart. 21, 1923.

Distr. Kamtschatka, Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegashima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China.

Note. Common species in both hemispheres; in the island it is found in open lands at low altitudes, and seems to have been introduced from elsewhere.

Friza, [LINN., Syst. ed. 1 1735] et Sp. Pl. ed. 1. p. 70 (1753), et Gen. Pl. ed. 5. p. 32 (1754); KUNTH, Enum. Pl. I. p. 371 (1833); ENDL., Gen. Pl. n. 883 (1835-40); BENTH. et HOOK. f., Gen. Pl. III. pp. 1093, 1194 (1833); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 72 (1887); LEMÉE, Dict. Gen. Pl. Phan. I. p. 678 (1929).

Friza minor, LINN., Sp. Pl. ed. 1. p. 70 (1753), et Gen. Pl. ed. 5. p. 32 (1754); WILLD., Sp. Pl. I. p. 403 (1797); KUNTH, Enum. Pl. I. p. 372 (1833), et Supp. I. p. 308 (1835); GRISEBACH, in Ledeb. Fl. Ros. IV. p. 336 (1853); STEUD., Syn. Glum. I. p. 282 (1855); MIQ., Fl. Ind. Bat. III. p. 396 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 178 (1876); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 72 (1887), et in Bull. Herb. Boiss. VII. p. 708 (1839); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 422 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 43 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 88 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1319 (1931).

Nom. Jap. *Hime-kobansô*

Leg. Ipse, Yosida, Mart. 21, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, China.

Note. The plant occurs by the roadside and on cultivated lands, and is said to be an European plant.

Lophatherum, BRONGNIART, in Duperrey Voy. Coq. Bot. p. 49 (1828); KUNTH, Enum. Pl. I. p. 390 (1833); ENDL., Gen. Pl. n. 897 (1835-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1191 (1833); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 71 (1887).

Syn. *Acroelytrum*, STEUD., in Flora XXIX. p. 20 (1846).

Allelothea, STEUD., Syn. Glum. I. p. 117 (1855).

Lophatherum gracile, BRONGNIART, var. *elatum*, BENTH., Fl. Hongk. p. 433 (1861); HACK., in Bull. Herb. Boiss. VII. p. 707 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 63 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 547 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 329 (1912); MERR., Enum. Hainan Pl. p. 35 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 91 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1358 (1931).

Syn. *Lophatherum clatum*, ZOLLINGER et MORITZ, Syst. Verz. p. 103 (1845-46); STEUD., Syn. Glum. I. p. 300 (1855); MIQ., Fl. Ind. Bat. III. p. 400 (1855), et in Ann. Mus. Bot. Lugd. Bat. II. p. 282 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 179 (1876); HACK., in Engl. Bot. Jahrb. VI. p. 50 (1884); MORI, Enum. Pl. Cor. p. 46 (1922).

Acroelytrum japonicum, STEUD., in Flora, XXIX. p. 21 (1846).

Allelothea Urvillei, STEUD., Syn. Glum. I. p. 117 (1855).

Lophatherum japonicum, STEUD., Syn. Glum. I. p. 300 (1855)

Acroelytrum Urvillei, STEUD., Syn. Glum. I. p. 117 (1855)

Lophatherum Lehmanni, NEES, ex STEUD. Syn. Glum. I. p. 300 (1855 ; HENRY, List Pl. Formos. p. 109 (1896))

Lophatherum gracile, var. *genuinum*, HACK., in Bull. Herb. Boiss. VII. p. 707 (1899 ; MATSUM., Ind. Pl. Jap. II. 1. p. 63 (1905) ; MAK. et NEM., Fl. Jap. ed. 1. p. 1462 (1925))

Nom. Jap. *Sasakusa*

Lcg. Ipse, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China.

Note. Occurs as undergrowth from the sea level up to about 800 m; widely distributed in southern Japan.

Eragrostis, HOST., Gram. Austral. IV. p. 14 (1809) ; BEAUV., Ess. Agrost. p. 70 (1812) ; ENDL., Gen. Pl. n. 876b 1836-40 ; STEUD., Syn. Glum. I. p. 263 (1855) ; BENTH. et HOOK. f., Gen. Pl. III. p. 1186 1833 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 69 (1887) ; LEMÉE, Dict. Gen. Pl. Phan. II. p. 896 1930

Syn. *Erochloe*, RAF., Neogensyt. p. 4 (1825)

Eragrostis atrovirens, TRINIUS, ex STEUD. Nomencl. p. 562 (1840) , et Syst. Glum. I. p. 268 1855 ; HACK., in Bull. Herb. Boiss. VII. p. 725 (1899) , et p. 529 1905 ; MATSUM., Ind. Pl. Jap. II. 1. p. 53 (1905) ; HAY., Ic. Pl. Formos. VII. p. 92 (1918) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929) ; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 100 1930 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1341 1931

Syn. *Poa atrovirens*, DESFONTAINES, Fl. Atlant. I. p. 73, t. 17 (1798)

Eragrostis elongata, non JACQUIN) JACQ., Eclog. Gram. III. t. 3 1818 ; PRESL, Rel. Haenk. I. p. 275 1830 ; RENDL., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 413 1904 ; HAY., Enum. Pl. Formos. p. 542 (1906) , et Mat. Fl. Formos. p. 407 1911 ; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 329 (1912)

Eragrostis orientalis, non TRINIUS NEES, in Nov. Act. Nat. Cur. XIX. Suppl. I. p. 205 1843 ; BENTH., Fl. Hongk. p. 432 1861) ; HENRY, List Pl. Formos. p. 109 1896

Eragrostis bulbifera, STEUD., Syn. Glum. I. p. 267 (1855 ; HACK., in Bull. Herb. Boiss. 2. sér. IV. p. 529 (1904) ; MATSUM., Ind. Pl. Jap. II. 1. p. 53 (1905) ; MATSUM. et HAY., Enum. Pl. Formos. p. 542 (1906))

Eragrostis Brownii, (non NEES MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 281 1865)

Eragrostis bahiensis, (non SCHRADER) HANCE, in Journ. Linn. Soc. XII. p. 136 1873 ; FR. et SAV., Enum. Pl. Jap. II. p. 177 (1876)

Nom. Jap. *Ito-suzumegaya*

Lcg. Ipse, Koseda, Sept. 7, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China.

Note. Grows by the roadside or on exposed ground; common in southern Japan.

Eragrostis pilosa, BEAUV., Ess. Agrost. pp. 71, et 162 (1812) ; ROEM. et SCHULT., Syst. Veg. II. p. 595 (1817 ; GRISEBACH, Fl. Ross. IV. p. 382 (1853) ; TURCZAN., Fl. Baical.-Dahur. I. p. 42 (1856) ; MAXIM., Prim. Fl. Amur. p. 320 (1859) ; BENTH., Fl. Hongk. p. 432 1861) , et Fl. Austral. VII. p. 645 (1878) ; FR. et SAV., Enum. Pl. Jap. II. p. 176 (1876) ; STAPP., in HOOK. f. Fl. Brit. Ind. VII. p. 323 (1897) ; p. ; HACK., in Bull. Herb. Boiss. VII. p. 706 (1899) , et 2 sér. III. p. 505 (1903) ;

ASCHERSON et GRAEBN., Syn. Mitteleurop. Fl. II. 1. p. 373 (1900); KOM., Fl. Mansh. I. p. 292 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 54 (1905); NAK., Fl. Kor. II. p. 366 (1911) partim.; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 329 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 91 (1918); PRINTZ, Veg. Siberian. Mongoliana Front. p. 130 (1921); MERR., Enum. Philipp. Pl. I. p. 90 (1922); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 102 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1342 (1931)

Syn. *Poa Pilosa*, LINN., Sp. Pl. ed. 1. p. 68 1753; WILLD., Sp. Pl. I. p. 391 (1799); KUNTH, Enum. Pl. I. p. 329 (1833)

Poa parviflora, R. BR., Prodr. p. 180 (1810)

Eragrostis verticillata, BEAUV., Ess. Agrost. p. 162 (1812); NEES, in HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 253 1836-40

Nom. Jap. *Óniwahokori*

Leg. Ipse, Haro, Sept. 6, 1926.

Distr. Honsyú, Sikoku, Kyúsyú, Okinawa, Korea, Manchuria, China, Philippines, India, Siberia, Europe.

Ncte. Occurs by the roadside and in waste lands.

Phragmites, ADANS., Fam. II. pp. 34 et 559 1763;

KUNTH, Enum. Pl. I. p. 250 (1833); ENDL., Gen. Pl. n. 824 (1836-40); STEUD., Syn. Glum. I. p. 195 1855; BENTH. et HOOK. f., Gen. Pl. III. p. 1179 1833; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 68 (1887)

Syn. *Arundo*, Sect. *Phragmites*, GRISEB., in LEDEB. Fl. Ross. p. 393 (1853)

Phragmites japonica, STEUD., Syn. Glum. I. p. 196 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 278 1866; FR. et SAV., Enum. Pl. Jap. II. p. 170 (1876); MORI, Enum. Pl. Cor. p. 51 1922; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 116 1930

Syn. *Phragmites communis*, var. *pumila*, HACK., in Bull. Herb. Boiss. VII. p. 704 (1899)

Phragmites communis, non TRINIUS MATSUM., Ind. Pl. Jap. II. 1. p. 75 1905 p.p.

Phragmites prostratus, MAK., in Tokyo Bot. Mag. XXVI. p. (237 (1912), et XXVIII. p. 23 (1914); MAK. et NEM., Fl. Jap. ed. 1. p. 1481 (1925), et ed. 2. p. 1373 (1931); MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 152 (1931)

Nom. Jap. *Turu-yosi*

Leg. Ipse, Nagata, Aug. 20, 1928.

Distr. Yezo, Honsyú, Sikoku, Kyúsyú, Korea.

Note. I found several individuals of this plant on the sea coast of Nagata. It has its southern limit in this island.

Arundo, [TOURN., ex LINN. Gen. ed. 1. p. 19 (1737)] et Sp. Pl. ed. 1. p. 81 (1753) p.p., et Gen. Pl. ed. 5. p. 35 (1754) p.p.; KUNTH, Enum. Pl. I. p. 246 (1833); ENDL., Gen. Pl. n. 821 (1836-40); STEUD., Syn. Glum. I. p. 193 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1179 (1833); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 63 (1837); LEMÉE, Dict. Gen. Pl. Phan. I. p. 404 (1929)

Syn. *Donax*, BEAUVOIS, Ess. Agrost. p. 77 (1812); ASCHERSON, Fl. Brand. I. p. 837 (1864)

Scolochloa, (non LINK) MERTENS et KOCH, Deutschl. Fl. I. p. 374 (1823)

Amphidonax, NEES, in LINDL. Nat. Syst. ed. 2. p. 449 (1836)

Arundo donax, LINN., Sp. Pl. ed. 1. p. 81 (1753); KUNTH, Enum. Pl. I. p. 246 (1833, et Supp. I. p. 189 t. XIV. f. 71 (1835); GRISEBACH, in LEDEBOUR Fl. Ross. IV. p. 394 (1853); STEUDEL, Syn. Glum. I. p. 193 (1855); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 68 (1837), et in Bull. Herb. Boiss. VII. p. 704 (1899); HOOK. f., Fl. Brit. Ind. VII. p. 302 (1897); MAK., Glum. Jap. Photo. I. Pl. XXIII. (1901); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 408 1904; MATSUM., Ind. Pl. Jap. II. 1. p. 41 (1905); HITCHCOCK, in U. S. Dept. Agric. Bull. 772 p. 60, Pl. VII. f. 26 (1920); MERR., Enum. Hainan Pl. p. 35 (1927), et in Lingn. Sc. Journ. VII. p. 194 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 120 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1313 (1931)

Syn. *Arundo sativa*, LAM., Fl. Fr. ed. 3. III. p. 616 (1778)

Arundo benghalensis, RETZIUS, Obs. IV. p. 22 (1786, ROXB., Fl. Ind. I. p. 348 (1832); KUNTH, Enum. Pl. I. p. 247 (1833); HENRY, List Pl. Formos. p. 109 (1896)

Arundo bifaria, RETZIUS, Obs. IV. p. 22 (1786; KUNTH, Enum. Pl. I. p. 247 (1833); MAK., in Tokyo Bot. Mag. X. p. 321 (1896; HACK., in Bull. Herb. Boiss. VII. p. 704 (1899)

Donax arundinaceus, BEAUV., Ess. Agrost. p. 78, t. 16, f. 4 et t. 19, f. 1 (1812

Donax benghalensis, BEAUV., Ess. Agrost. p. 78 (1812)

Amphidonax bifaria, NEES ex STEUDEL, Syn. Glum. I. p. 197 (1855; MIQ., Fl. Ind. Bat. III. p. 410 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 171 (1876

Nom. Jap. *Dantiku*

Leg. Ipse, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. The species stretches along the rivers from the sea level up to about 700 m and is one of the pandemic species distributed in the Caucasus, Himalaya, Siberia, Europe and the western part of Africa.

Avena, [LINN., Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 79 (1753), et Gen. Pl. ed. 5. p. 34 (1754) partim; KUNTH, Enum. Pl. I. p. 299 (1833); ENDL., Gen. Pl. n. 864 (1836-40); STEUDEL, Syn. Glum. I. p. 229 (1855); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 55 (1837; LEMÉE, Dict. Gen. Pl. Phan. I. p. 468 (1929)

Avena fatua, LINN., Sp. Pl. ed. 1. p. 80 (1753); BENTH., Fl. Hongk. p. 430 1861; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 279 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 173 (1876); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 55 (1837); HOOK. f., Fl. Brit. Ind. VII. p. 275 (1897); MATSUM., Ind. Pl. Jap. II. 1. p. 42 (1905); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 326 (1912); HAY., Ic. Pl. Formos. VII. p. 90 (1918); HITCHCOCK, in U. S. Dept. Agric. Bull. 772 p. 111. f. 58 (1920); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 131 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1315 (1931)

Syn. *Avena nigra*, WALL., in Linn. XIV. p. 544 (1840)

Avena fatua, var. *glabrata*, (non PETER nec STAPE) MORI, Enum. Pl. Cor. p. 39 (1921)

Nom. Jap. *Karasumugi*

Leg. Ipse, Yosida, Mart. 21, 1923.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Siberia, India.

Note. It is found in low wet lands, and is widely distributed in the northern hemisphere.

- Deschampsia**, BEAUV., Ess. Agrost. p. 91 1812 ; KUNTH, Enum. Pl. I. p. 236 1833 ; ENDL., Gen. Pl. n. 857 1835-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 1157 1883 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 54 1887 ; LEMÉE, Dict. Gen. Pl. Phan. II. p. 552 1930
- Syn.** *Aira*, LINN., Sp. Pl. ed. 1. p. 63 1753 p.p.; KUNTH, Enum. Pl. I. p. 283 1833 p.p.; STEUD., Syn. Glum. I. p. 218 1855 p.p.; HITCHCOCK, in U. S. Dept. Agric. Bull. 772. p. 114 1920
- Aera*, ASCHERSON, Fl. Brand. ed. 1. I. p. 830 1861 p.p.; ASCHERSON et GRAEBN., Syn. Mitteleurop. Fl. I. p. 277 1899 p.p.

- Deschampsia caespitosa**, BEAUV., Ess. Agrost. p. 91. t. 18. f. 3 1812 ; KUNTH, Enum. Pl. I. p. 296 1833 , et Supp. I. p. 241 1835 ; GRISEB., in LEDEB. Fl. Ross. IV. p. 421 1853 ; MAXIM., Prim. Fl. Amur. p. 323 1859 ; BENTH., Fl. Austral. VII. p. 537 (1878 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 54 f. 61 1887), et in Bull. Herb. Boiss. VII. p. 702 1899 ; BRITT. et BROWN, III. Fl. I. p. 169, f. 337 1896 ; HOOK. f., Fl. Brit. Ind. VII. p. 273 1897 ; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 399 1901 ; MATSUM., Ind. Pl. Jap. II. 1. p. 50 1905 ; HEG., III. Fl. Mitt. Europ. I. p. 243, t. 29 f. 1. 1905 ; HAY., Fl. Mont. Formos. p. 233 1903 , et Ic. Pl. Formos. VII. p. 90 (1918 ; KOIDZ., Fl. Nakah. p. 19 1910 ; MIY. et MIYAKE, Fl. Sagh. p. 570 1915 ; MORI, Enum. Pl. Cor. p. 41 1922 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929 ; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 133 1930 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1335 1931 ; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 146 1931
- Syn.** *Aira caespitosa*, LINN., Sp. Pl. ed. 1. p. 64 1753 ; TRINIUS, Sp. Gram. Ic. III. t. 253 1835 ; STEUDL., Syn. Glum. I. p. 219 1855 ; KOM., Fl. Mansh. I. p. 283 1901 ; HITCHCOCK, in U. S. Dept. Agric. Bull. 772. p. 116, f. 60 1920
- Avena caespitosa*, GRIESSELICH, Fl. Schrift. p. 52 1836
- Aera caestrosa*, ASCHERSON et GRAEBN., Syn. Mitteleurop. Fl. II. 1. p. 239 1899
- Deschampsia caespitosa*, var. *corensis*, HACK., ex NAK. Veg. Isl. Quelp. p. 19 (1914 ; MORI, Enum. Pl. Cor. p. 41 1922

Nom. Jap. *Miyama-komesusuki*:

Leg. Ipse, Miyanouragadake, 1926.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria.

Note. This lithophyte grows on the granite rocks scattered in the Pseudosasa Owatarii Association in the higher portions of the island, and is found in the boreal regions of the northern hemisphere.

- Deschampsia flexuosa**, TRINIUS, in Bull. Ac. St. Pet. I. p. 66 (1836) ; GRISEBACH, in LEDEB. Fl. Ross. IV. p. 420 (1853) ; MATSUM., Cat. p. 332 (1895), et Ind. Pl. Jap. II. 1. p. 50 (1905) ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 54 (1887 , et in Bull. Herb. Boiss. VII. p. 702 1899) ; MIY., Fl. Kuril. p. 269 1890 ; HEGI, II. Fl. Mitteleurop. I. p. 245 (1905) ; HAY., Fl. Mont. Formos. p. 233 (1908 , et Ic. Pl. Formos. VII. p. 90 (1918) ; TAKEDA, Fl. Shikot. p. 495 (1914) ; MIY. et MIYAKE, Fl. Saghal. p. 569 (1915) ; KOM., Fl. Pen. Kamt. I. p. 153 (1927) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929) ; HONDA, Monogr. Poac. Jap. Bamb. excl. p.

134 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 147 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1337 (1931)

Syn. *Aira flexuosa*, LINN., Sp. Pl. p. 65 (1753); KUNTH, Enum. Pl. I. p. 290 (1833, et Supp. I. p. 243 (1833); STEUD., Syn. Glum. I. p. 222 (1855)

Avena flexuosa, LEERS, Fl. Herb. p. 5 (1775); MERTENS et KOCH, Deutschl. Fl. I. p. 570 (1823)

Lerchenfeldia flexuosa, SCHUR., Enum. Pl. Transsylv. p. 754 (1866)

Aira flexuosa, var. *montana*, (non PARLATORE FR. et SAV., Enum. Pl. Jap. II. p. 172 (1876))

Aira flexuosa, ASCHERSON et GRAEBN., Syn. Mitteleurop. Fl. II. 1. p. 236 (1899)

Nom. Jap. *Komé-susuki*

Leg. Ipse, Jul. 8, 1928.

Distr. Kamtschatka, Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Taiwan, Manchuria, Siberia, Caucasus, Europe.

Note. The species grows as a lithophyte in the crevices of granite rocks scattered in the Pseudosasa Owatarii Association. It is distributed in the northern temperate regions or in the alpine regions of the northern hemisphere.

f. pallida, HACK., ex HONDA, apud MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929), et Monogr. Poac. Jap. Bamb. excl. p. 135 (1930)

Nom. Jap. *Ao komesusuki*

Leg. Ipse, 1928.

Distr. Honsyû.

Note. Grows on rocks or in crevices of granite rocks scattered in the alpine regions of the island. It is restricted to Honsyû and to this island.

Eleusine, GAERTN., Fruct. and Sem. I. p. 7 (1788); KUNTH, Enum. Pl. I. p. 272 (1833); ENDL., Gen. Pl. n. 841 1836-40; GRISEBACH, in LEDEB. Fl. Ross. IV. p. 452 (1853); STEUDEL, Syn. Glum. I. p. 210 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1172 (1883 p.p.); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 61 (1887); HOOK. f., Fl. Brit. Ind. VII. p. 293 1897 p.p.; LEMÉE, Dict. Gen. Pl. Phan. II. p. 821 (1930 p.p.)

Eleusine indica, GAERTN., Fruct. I. p. 8 (1783); LAM., Ill. I. p. 233, t. 43, f. 3 1791; ROXB., Fl. Ind. I. p. 345 (1832); KUNTH, Enum. Pl. I. p. 272 (1833, et Supp. I. p. 224 1835); GRISEBACH, in LEDEB. Fl. Ross. IV. p. 453 (1853); STEUD., Syn. Glum. I. p. 211 (1855); MIQ., Fl. Ind. Bat. III. p. 395 (1855), et in Ann. Mus. Bot. Lugd. Bat. II. p. 279 (1866); BENTH., Fl. Hongk. p. 429 (1861), et Fl. Austral. VII. p. 615 (1878); FR. et SAV., Enum. Pl. Jap. II. p. 171 (1876); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 61, f. 71 (1887), et in Bull. Herb. Boiss. VII. p. 703 (1899); HOOK. f., Fl. Brit. Ind. VII. p. 293 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 405 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 52 (1905); NAK., Fl. Kor. II. p. 362 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 327 1912; HAY., Ic. Pl. Formos. VII. p. 90 (1918); LOESN., Pfl.-welt. Kiautsch. Geb. p. 90 1918; YABE, Prel. Rep. Fl. Tsing-Tau-Region. p. 25 (1919); MERR., Enum. Philipp. Pl. I. p. 85 (1922), et Enum. Hainan Pl. p. 34 (1927); HITCHCOCK, in Lingn. Sc. Journ. VII. p. 203 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 150 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1340 (1931)

Syn. *Cynasurus indicus*, LINN., Sp. Pl. ed. 1. p. 72 (1753); THUNB., Fl. Jap. p. 52 (1784); LOUR., Fl. Cochinch. p. 59 (1790); WILLD., Sp. Pl. I. p. 417 (1797)

Eleusine japonica, STEUDL., Syn. Glum. I. p. 211 1855

Nom. Jap. *Ohiziwa*

Leg. Ipse, Jun. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Amami-Ôsima, Taiwan, Bonins, Korea, China, Philippines, India.

Acte. Grows in waste or cultivated lands in the submountain zone.

Cynoçon, RICHARD, in PERSOON, Syn. Pl. I. p. 85

1835 ; KUNTH, Enum. Pl. I. p. 259 1833 ; ENDL., Gen. Pl. n. 836 1836-40 ;

STEUDL., Syn. Glum. I. p. 212 (1855) ; BENTH. et HOOK. f., Gen. Pl. III. p. 1164

1883 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 58 (1887 ; HOOK. f.,

Fl. Brit. Ind. VII. p. 238 1897 ; ASCHERSON et GRAEB., Syn. Mitteleurop. Fl.

II. 1. p. 84 (1893 ; LEMÉE, Dict. Gen. Pl. Phan. II. p. 458 (1930

Syn. *Capriola*, ADANS., Fam. Pl. II. pp. 31. et 532 1763 ; O. KUNTZE, Rev. Gen. Pl.

II. p. 764 1891 ; BRIT. et BROWN, Ill. Fl. 1. p. 175 (1896 ; HITCHCOCK,

in U. S. Dept. Agric. Bull. 772, p. 175, f. 105 1920

Dactylon, VILLARS, Pl. Delph. II. p. 69 1787) p.p.

Fibichia, KOELER, Gram. Gall. et Germ. p. 303 1802

Dactylus, ASCHERSON, Fl. Brandenb. I. p. 810 1864

Cynodon dactylon, LINN. PERSOON, Syn. Pl. I. p. 85 1805 ; ROEM. et SCHULT., Syst.

Veg. II. p. 410 1817 ; KUNTH, Enum. Pl. I. p. 259 1833 , et Suppl. p. 203, t. XVI.

f. 1. 1835 ; GRISEBACH, in LEDEB. Fl. Ross. IV. p. 452 1853 ; STEUDL., Syn.

Glum. I. p. 212 1855 ; MIQ., Fl. Ind. Bat. III. p. 382 1855 , et in Ann. Mus.

Bot. Lugd. Bat. II. p. 279 1866) ; BENTH., Fl. Hongk. p. 428 1861 , et Fl. Austral.

VII. p. 609 1878 ; FR. et SAV., Enum. Pl. Jap. II. p. 172 (1876) ; HACK., in ENGL.

u. PRANT. Nat. Pfl.-fam. II. ii. p. 58, f. 67 (1887 , et Bull. Herb. Boiss. VII. p. 703

1899 ; HOOK. f., Fl. Brit. Ind. VII. p. 283 1897 ; RENDLE, in FORB. et HEMSL.

Ind. Fl. Sin. III. p. 402 1904 ; MATSUM., Ind. Pl. Jap. II. 1. p. 50 (1905 ; DUNN

et TUTCH., Fl. Kwang. & Hongk. p. 326 1912 ; HAY., Ic. Pl. Formos. VII. p. 90

1918 ; LOESN., Pfl.-welt. Kiautsch. Geb. p. 90 (1918 ; YABE, Prel. Rep. Fl. Tsing-

Tau-Region. p. 21 1919 ; MERR., Enum. Philipp. Pl. I. p. 83 (1922) , et Enum.

Hainan Pl. p. 34 1927 ; MORI, Enum. Pl. Cor. p. 41 (1922) ; MASAMUNE, Prel.

Rep. Veg. Yak. p. 42 1929 ; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 154 (1930 ;

MAK. et NEM., Fl. Jap. ed. 2. p. 1335 1931

Syr. *Panicum Dactylon*, LINN., Sp. Pl. ed. I. p. 58 (1753 ; WILLD., Sp. Pl. I. p. 342

(1797 ; ROXB., Fl. Ind. I. p. 289 1832

Paspalum Dactylon, LAM., Ill. I. p. 176 (1791)

Paspalum umbellatum, LAM., Ill. I. p. 177 (1791)

Fibichia umbellata, KOELER, Gram. Gall. et Germ. p. 303 (1802)

Cynodon linearis, WILLD., Enum. Hort. Berol. p. 90 (1809 ; NEES, in HOOK.

Journ. Bot. Kew. Miscel. II. p. 93 (1850)

Panicum glumaepatulum, STEUD., Syn. Pl. Glum. I. p. 41 (1854

Digitaria glumaepatula, MIQ., Fl. Ind. Bat. III. p. 439 (1857)

Capriola Dactylon, O. KUNTZE, Rev. Gen. Pl. II. p. 764 (1891) ; BAILLON, Hist.

Pl. XII. p. 159 (1894) ; HITCHCOCK, in U. S. Dept. Agric. Bull. 772 p. 178

(1920

Nom. Jap. *Gyôgi-siba*

Leg. Ipse, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines.

Not. Grows by the roadside or in waste lands near dwellings; a pandemic species distributed in the tropics and warm lands.

Calamagrostis, ADANS., Fam. Pl. II. pp. 31. 530 1763; KUNTH, Enum. Pl. I. p. 236 (1833; ENDL., Gen. Pl. n. 817 (1833-40; STEUDEL, Syn. Glum. I. p. 187 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1150 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 51 (1887; HOOK. f., Fl. Brit. Ind. VII. p. 260 (1897); LEMÉE, Dict. Gen. Pl. Phan. I. p. 744 (1929)
Syn. *Dzyeuxia*, CLARION, ex BEAUV. Ess. Agrost. p. 43 t. 9 ff. 9 et 10 1812; BENTH. et HOOK. f., Gen. Pl. III. p. 1152 (1883)

Calamagrostis hakonensis, FR. et SAV., Enum. Pl. Jap. II. p. 163 1876, et p. 599 1879; TAKEDA, in Kew Bull. Miscell. p. 217 (1912); KUDO, Contr. Fl. North. Saghal. p. 21 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 167 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 141 (1931) *excl. syn.*; MAK. et NEM., Fl. Jap. ed. 2. p. 1324 (1931)

Syn. **Calamagrostis sachalinensis**, (non FR. SCHMIDT HACKEL, in Engl. Bot. Jahrb. VI. p. 50 (1885, et in Bull. Herb. Boiss. VII. p. 650 (1899 p.p.; MATSUM. Ind. Pl. Jap. II. 1. p. 47 (1905 p.p.

Nom. Jap. *Hime-nogariyasu*

Lcg. Ipse, Miyanoura, Aug. 31, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû.

Note. The species is found in the Pseudosasa Owatarii Association where the land is exposed. It is widely distributed in northern Japan and has its southern limit in this island.

Calamagrostis longiseta, HACK., ex MATSUM. in Tokyo Bot. Mag. XII. p. 28 (1893, et Ind. Pl. Jap. II. 1. p. 46 (1905); HACK., in Bull. Herb. Boiss. VII. p. 650 (1899; KOIDZ., in Tokyo Bot. Mag. XXVIII. p. (113 (1914, et XXXIII p. 204 1919; MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 182 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1326 (1931)

Nom. Jap. *Hige-nogariyasu*

Lcg. Ipse, 1927.

Distr. Yezo, Honsyû, Kyûsyû.

Note. The species is found in the Pseudosasa Owatarii Association ranging from Yezo to Yakusima and has its southern limit in this island.

Calamagrostis Masamunei, HONDA, in Tokyo Bot. Mag. XLIII. p. 191 1929, et Monogr. Poac. Jap. Bamb. excl. p. 182 (1930; MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1326 (1931)

Nom. Jap. *Yakusima-nogariyasu*

Lcg. Ipse, Jul. 28, 1922.

Distr. Endemica

Note. Grows along small streams which flow through the Pseudosasa Owatarii Association.

Calamagrostis orthophylla, HAY. et HONDA, ex HONDA, in Tokyo Bot. Mag. XL. pp. 325, et 329 (1926, et Monogr. Poac. Jap. Bamb. excl. p. 172 (1930; MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1327 (1931)

Nom. Jap. *Tati-iwanogariyasu*

Lcg. Ipse, Aug. 31, 1926.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. Occurs in the Pseudotsuga Owatarii Association and marks its southern limit in this island.

Agrostis, [LINN., Syst. ed. 1. (1735, et Gen. ed.

1. p. 19 (1737)] Sp. Pl. ed. 1. p. 61 (1753, et Gen. Pl. ed. 5. p. 30 (1754); KUNTH, Enum. Pl. I. p. 217 (1833); ENDL., Gen. Pl. n. 810 1836-40; BENTH. et HOOK. f., Gen. Pl.:III. p. 1149 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 50 (1887); LEMÉE, Dict. Gen. Pl. Phan. I. p. 125 (1929)

Syn. *Vilfa*, ADANS., Fam. II. p. 495 (1763)

Apera, ADANS., Fam. II. p. 495 (1763)

Agrostis alba, LINN., Sp. Pl. ed. 1. p. 63 (1753; WILLD., Sp. Pl. I. p. 371 (1797; KUNTH, Enum. Pl. I. p. 219 (1833), et Supp. I. p. 175 (1836; STEUD., Syn. Glum. I. p. 167 (1855; TURCZAN., Fl. Baical-Dahur. I. p. 17 (1856; BENTH., Fl. Austral. VII. p. 576 (1878; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 50 (1887, et in Bull. Herb. Boiss. VII. p. 649 (1899; MATSUM., in Tokyo Bot. Mag. XI. p. 445 (1897, et Ind. Pl. Jap. II. 1. p. 34 (1905; PILG., in Engl. Bot. Jahrb. XXIX. p. 224 (1900; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 389 (1904; MIY. et MIYAKE, Fl. Saghal. p. 563 (1915; LOESN., Pfl.-welt. Kiautsch. Geb. p. 89 (1918; PRITZ, Veg. Siberian-Mongoliana Front. p. 122 (1921; MIURA, Fl. Manch. & Mong. p. 26 (1925; MERR., Enum. Philipp. Pl. I. p. 81 (1922

Syn. *Agrostis palustris*, HUDSON, Fl. Angl. p. 27 (1762; HITCHCOCK, in U. S. Dept. Agric. Bull. 772, p. 128, Pl. XIII. f. 67 (1920; HONDA, in Tokyo Bot. Mag. XL. p. 322 (1926, et Monogr. Poac. Jap. Bamb. excl. p. 186 (1930; MASAMUNE, Prel. Rep. Veg. Yak. p. 40 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1305 (1931; MIY. et KUDO, Fl. Hokk. & Saghal. II. p. 133 (1931

Agrostis alba, forma *coarctata*, HACK., in Bull. Herb. Boiss. VII. p. 649 (1899

Nom. Jap. *Konukagusa*

Leg. Ipse, 1927.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China, Philippines, Himalaya.

Note. The species is found by the roadside, from 700 m up to 1800 m above the sea level, and is widely distributed in the northern part of Japan.

Agrostis flaccida, HACK. in Bull. Herb. Boiss. VII. p. 649 (1899; MATSUM., Ind. Pl. Jap. II. 1. p. 34 (1905; TAKED., Fl. Sikot. p. 495 (1914; MORI, Enum. Pl. Cor. p. 36 (1922; MASAMUNE, Prel. Rep. Veg. Yak. p. 40 (1929; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 189 (1930; MIY. et KUDO, Fl. Hokk. & Saghal. II. p. 134 (1931; MAK. et NEM., Fl. Jap. ed. 2. p. 1304 (1931)

Syn. *Agrostis canina*, (non LINN.) FR. SCHMIDT., Reisen. Amur. Sachal. p. 203 (1868); MIY., Fl. Kuril. p. 269 (1890; MIY. et MIYAKE, Fl. Saghal. p. 564 (1915)

Agrostis debilis, HACK., ex MATSUM. in Tokyo Bot. Mag. XI. p. 445 (1897

Nom. Jap. *Miyama-nukabo*

Leg. Ipse, Yaeda, 1926.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. The species occurs by the roadside and on mountain passes at high altitudes and has its southern limit in this island.

Agrostis Matsumurae, HACK., ex MATSUM. in Tokyo Bot. Mag. XI. p. (445) (1897; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 191 (1930,

Syn. *Agrostis tenuiflora*, (non WILLDN.) STEUD., Syn. Glum. I. p. 163 (1855); HACK., in Bull. Herb. Boiss. VII. p. 648 (1899); YABE, in Tokyo Bot. Mag. XVII. p. 126 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 35 (1905); MORI, Enum. Pl. Cor. p. 37 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1306 (1931)

Agrostis perennans, (non TUCKERMAN) MAK. et NEM., Fl. Jap. ed. 1. p. 1414 (1925) partim.

Nom. Jap. *Nukabo*

Leg. Ipse, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Taiwan.

Note. Occurs in the Pseudosasa Owatarii Association; rather common in Japan.

Agrostis clavata, TRIN., in SPRENG. Neue Entdeck. II. p. 55 (1821), et Syst. I. p. 260 (1825); KUNTH, Enum. Pl. I. p. 227 (1833); PRINZ., Veg. Siberian.-Mongolian. Front. p. 122 (1921); HULT., Fl. Kamtch. I. p. 95 (1927); KOM., Fl. Pen. Kamtsch. I. p. 140 (1927); MIY. et KUDO, Fl. Hokk. & Saghal. II. p. 137 (1931)

Syn. *Cornucopiae perennans*, WALTER, Fl. Carol. p. 74 (1788)

Trichodium Perennans, ELLIOT., Sketch. I. p. 99 (1821)

Trichodium Clavatum, SCHULT., Mant. III. p. 556 (1827)

Agrostis perennans, TUCKERMAN, in Amer. Journ. Sci. XLV. p. 44 (1843); STEUD., Syn. Glum. I. p. 165 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 277 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 166 (1876); MIY., Fl. Kuril. p. 269 (1890); PILG., in Engl. Bot. Jahrb. XXIX. p. 224 (1900); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 390 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 34 (1905); KOIDZ., Pl. Saghal. Nakah. p. 16 (1910); HAY., Mat. Fl. Formos. p. 407 (1911), et Ic. Pl. Formos. VII. p. 86 (1918); NAK., Fl. Kor. II. p. 359 (1911); MIY. et MIYAKE, Fl. Saghal. p. 565 (1915); MORI, Enum. Pl. Cor. p. 36 (1922); KOM., Fl. Pen. Kamtsch. I. p. 142 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 193 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1305 (1931)

Agrostis scabra, (non WILLD.) A. GRAY, Pl. Jap. p. 439 (1856); NAK., Fl. Kor. II. p. 359 (1911)

Agrostis laxiflora, (non R. BR.) TURCZAN., Fl. Baical.-Dahur. I. p. 18 (1856); FR. SCHMID., Reisen Amur. Sachal. in Mem. Acad. Imp. Sc. Petersb. Ser. VII. t. XII. 2. p. 203 (1868)

Agrostis Scouleri, (non TRINIUS) HACKEL, in Bull. Herb. Boiss. 2 sér. IV. p. 523 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 35 (1905); MAK. et NEM., Fl. Jap. ed. 1. p. 1415 (1925)

Agrostis Michauxii, TRIN., De Gram. Uniflor. p. 206 (1824)

Nom. Jap. *Yama-nukabo*

Leg. Ipse, 1928.

Distr. Kamtchatka, Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China.

Note. The species occurs in the Pseudosasa Owatarii Association at high altitudes. It is distributed in the northern part of the north hemisphere and especially flourishes in subalpine meadows.

Sporobolus, R. BR., Prodr. Fl. Nov. Holl. p. 169 (1810); KUNTH, Enum. Pl. I. p. 209 (1833); ENDL., Gen. Pl. n. 809 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1148 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 49 (1887)

Syn. Agrosticula, RADDI, *Agrost. Bras.* p. 33 t. 1. f. 2 (1823)
Bennetia, RAF., in *Bull. Bot. Seringe*, I. p. 220 (1830)

Sporobolus elongatus, R. BR., *Prodr. Fl. Nov. Holl.* p. 170 (1810); KUNTH, *Enum. Pl.* I. p. 212 (1833), et *Supp. I.* p. 168 (1835); MIQ., *Fl. Ind. Bat. III.* p. 376 (1855), et in *Ann. Mus. Bot. Lugd. Bat. II.* p. 278 (1865); FR. et SAV., *Enum. Pl. Jap. II.* p. 166 (1876); HACK., in *Bull. Herb. Boiss. VII.* p. 648 (1899); MATSUM., *Ind. Pl. Jap. II. 1.* p. 84 (1905); NAK., *Fl. Kor. II.* p. 355 (1911); YABE, *Prel. Rep. Fl. Tsing-Tau-Region* p. 24 (1919); MASAMUNE, *Prel. Rep. Veg. Yak.* p. 46 (1929); HONDA, *Monogr. Poac. Jap. Bamb. excl.* p. 203 (1930); MAK. et NEM., *Fl. Jap. ed. 2.* p. 1405 (1931)

Syn. Cinna japonica, STEUD., *Syn. Glum. I.* p. 182 (1855)

Sporobolus indicus, (non R. BR.) BENTH., *Fl. Hongk.* p. 426 1861 p.p., et *Fl. Austral. VII.* p. 622 (1878) p.p.; HOOK. f., *Fl. Brit. Ind. VII.* p. 247 1897 partim.; RENDLE, in *FORB. et HEMSL. Ind. Fl. Sin. III.* p. 388 1904; MATSUM. et HAY., *Enum. Pl. Formos.* p. 534 1906; NAK., *Fl. Kor. II.* p. 356 (1911); MATSUDA, in *Tokyo Bot. Mag. XXVIII.* p. 322 1914; HAY., *lc. Pl. Formos. VIII.* p. 83 1918; DUNN et TUTCH., *Fl. Kwang. & Hongk.* p. 325 (1912); LOESN., *Pfl.-welt. Kiautsch. Geb.* p. 89 1918; MERR., *Enum. Hainan Pl.* p. 34 1927; HITCHCOCK, in *Lingn. Sc. Journ. VII.* p. 198 1929

Nom. Jap. Nezumi-no-o

Leg. Ipse, Ambô.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. Occurs in waste lands or by the roadside; common in the Far East.

Alopecurus, [LINN., *Syst. ed. 1* 1735, *Gen. ed. 1.* p. 18 1737] *Sp. Pl. ed. 1.* p. 60 1753, et *Gen. Pl. ed. 5.* p. 30 1754; KUNTH, *Enum. Pl. I.* p. 23 (1833); ENDL., *Gen. Pl. n.* 747 (1836-40); STEUD., *Syn. Glum. I.* p. 147 (1855); BENTH. et HOOK. f., *Gen. Pl. III.* p. 1140 (1883); HACK., in *ENGL. u. PRANT. Nat. Pfl.-fam. II. ii.* p. 48 1887; LEMÉE, *Dict. Gen. Pl. Phan. I.* p. 168 1929

Syn. Tozzettia, SAVI, in *Mem. Soc. Ital. VIII.* p. 477 (1793)

Alopecurus geniculatus, LINN., *Sp. Pl. ed. 1.* p. 60 1753, et *Gen. Pl. ed. 5.* p. 30 1754; THUNB., *Fl. Jap.* p. 49 (1784); KUNTH, *Enum. Pl. I.* p. 24 (1833), et *Supp. I.* p. 18, t. VII. f. 1 1835; GRISEB., in *LEDEB. Fl. Ross. IV.* p. 464 1853; STEUDEL, *Syn. Glum. I.* p. 147 (1855); MAXIM., *Prim. Fl. Amur.* p. 336 (1859); BENTH., *Fl. Hongk.* p. 403 (1861); MIQ., in *Ann. Mus. Bot. Lugd. Bat. II.* p. 277 (1866); FR. et SAV., *Enum. Pl. Jap. II.* p. 158 (1876); HOOK. f., *Fl. Brit. Ind. VII.* p. 239 (1897); MATSUM., *Ind. Pl. Jap. II. 1.* p. 36 (1905); LOESN., *Pfl.-welt. Kiautsch. Geb.* p. 89 (1918); HITCHCOCK, in *U. S. Dept. Agr. Bull.* 772, p. 137 1920; MASAMUNE, *Prel. Rep. Veg. Yak.* p. 41 (1929); HONDA, *Monogr. Poac. Jap. Bamb. excl.* p. 204 (1930)

Syn. Alopecurus aequalis, SOBOLEVSKY, *Fl. Petropol.* p. 16 (1793); RENDL., in *FORB. et HEMSL. Ind. Fl. Sin. III.* p. 384 (1904); MATSUM. et HAY., *Enum. Pl. Formos.* p. 533 (1906); DUNN et TUTCH., *Fl. Kwang. & Hong.* p. 325 (1912); HAY., *lc. Pl. Formos. VII.* p. 82 (1918); HULT., *Fl. Kamtch. I.* p. 89 (1927)
Alopecurus fulvus, J. E. SMITH, in *Engl. Bot. XXI. t.* 1467 1805; KUNTH, *Enum. Pl. I.* p. 24 (1833); FR. SCHMID., *Reisen. Amur. Sachal.* p. 203 (1868);

HACK., in Bull. Herb. Boiss. VII. p. 648 (1899); MAK., Glum. Jap. I. 1. Pl. 1. (1901); KOM., Fl. Mansh. I. p. 271 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 35 (1905); KOIDZ., Fl. Sachal. Nakah. p. 15 (1910); NAK., Fl. Kor. II. p. 355 (1911); MIY. et MIYAKE, Fl. Saghal. p. 562 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 1306 (1931)

Alopecurus geniculatus, subsp. *fulvus*, HOOK. f., Student Fl. Brit. Isl. ed. 3. p. 474 (1884); MIY., Fl. Kuril. p. 269 (1890)

Nom. Jap. *Suzume-no-teppô*

Leg. Ipse, 1927.

Distr. Kamtschatka, Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Siberia, America.

Note. The species is found in cultivated or waste lands and very often in wet places, and it is a widely distributed species in the world.

Alopecurus japonicus, STEUD., Syn. Glum. I. p. 149 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 158 (1876); HACK., in Bull. Herb. Boiss. VII. p. 648 (1899); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 385 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 36 (1905); MAK. et NEM., Fl. Jap. ed. 1. p. 1416 (1925), et ed. 2. p. 1307 (1931); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 205 (1930)

Syn. *Alopecurus malacostachyus*, A. GRAY, in Narr. Perry's Exped. Jap. p. 328 (1856)
Alopecurus agrestis, non LINN., PILG., in Engl. Bot. Jahrb. XXIX. p. 224 (1900)

Nom. Jap. *Seto-gaya*

Leg. Ipse, Kurio, Mart. 23, 1923.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, China.

Note. Occurs in the lowlands on somewhat sunny ground.

Anthoxanthum, [LINN., Gen. ed. 1. p. 18 (1737)]

Sp. Pl. ed. 1. p. 28 (1753), et Gen. Pl. ed. 5. p. 17 (1754); KUNTH, Enum. Pl. I. p. 37 (1833); ENDL., Gen. n. 756 (1836-40); STEUD., Syn. Glum. I. p. 12 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1138 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 43 (1887); LEMÉE, Dict. Gen. Pl. Phan. I. p. 309 (1929)

Anthoxanthum odoratum, LINN., Sp. Pl. ed. 1. p. 28 (1753); KUNTH, Enum. Pl. I. p. 38 (1833), et Supp. p. 28, t. 8 (1835); STEUD., Syn. Glum. I. p. 13 (1855); BENTH., Fl. Austral. VII. p. 557 (1878); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. 2. p. 43 (1887), et in Bull. Herb. Boiss. VII. p. 646 (1899); HOOK. f., Fl. Brit. Ind. VII. p. 222 (1897); PRINTZ, Veg. Sieb. Mongolian. Front. p. 117 (1921); MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 226 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1310 (1931); MIY. et KUDO, Fl. Hokk. & Saghal. II. p. 125 (1931)

Nom. Jap. *Harugaya*

Leg. Ipse, Jul. 26, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Siberia, Causasus.

Note. Occurs in the Pseudosasa Owatarii Association in the alpine region.

Pennisetum, RICHARD, in PERSOON, Syn. Pl. I.

p. 72 (1805); KUNTH, Enum. Pl. I. p. 160 (1833); ENDL., Gen. Pl. n. 781 (1836-40); STEUD., Syn. Glum. I. p. 102 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1105 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 38 (1887)

Syn. *Penicillaria*, WILLD., Enum. Hort. Berol. p. 1036 (1809); KUNTH, Enum. Pl. I. p. 165 (1833)

Gymnothrix, BEAUV., Ess. Agrost. p. 59 t. 13. f. 6 (1812)

Gymnothrix, SPRENG., Anleit. ed. 2. II. 1. p. 154 (1817)

Catatherophora, STEUD., in Fl. XII. p. 465 (1829)

Pennisetum sordidum, KOIDZ., in Tokyo Bot. Mag. XXXIII. p. 112 (1919 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929) ; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 233 (1930) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1371 (1931)

Syn. *Pennisetum japonicum*, var. *viridescens*, MATSUM., Ind. Pl. Jap. II. 1. p. 74 (1905) p.p. ; MATSUM. et HAY., Enum. Pl. Formos. p. 512 (1906 p.p.)

Nom. Jap. *Sima-tikarasiba*

Leg. Ipse, 1927.

Distr. Kyûsyû, Amami-Ôsima, Bonins, Taiwan.

Note. The lithophyte grows in crevices of sedimental rocks in the littoral region.

Setaria, (non ACHARIUS nec MICHAUX BEAUV., Fl. d'Oware. II. p. 80 (1807-18'), et Ess. Agrost. p. 51 (1812 ; HUMBOLT, BONPLAND et KUNTH, Syn. Pl. I. p. 183 (1822) ; KUNTH, Enum. Pl. I. p. 149 (1833) ; ENDL., Gen. Pl. n. 781a (1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 1105 (1883) ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 36 (1887)

Syn. *Panicum*, Sect. *Setaria*, STEUD., Syn. Glum. I. p. 49 (1855 ; ASCHERSON et GRAEBN., Syn. Mitteleurop. Fl. II. 2. p. 233 (1930)

Chaetochloa, SCRIBNER, in U. S. Dept. Agric. Agrost. Bull. IV. p. 38 (1897) ; HITCHCOCK, in Contrb. U. S. Nat. Herb. XVII. 3. p. 259 1913 ; HONDA, in Tokyo Bot. Mag. XXXVIII. p. 191 (1924)

Setaria lutescens, HUBB., in Rhodora XVIII. p. 232 1916 ; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 119 (1931)

Syn. *Panicum lutescens*, WEIGEL., Obs. Bot. p. 20 1772

Setaria glauca, BEAUV., Ess. Agr. p. 51 (1812 ; KUNTH, Enum. Pl. I. p. 149 1833 ; MAXIM., Prim. Fl. Amur. pp. 330, et 479 (1859 ; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 275 1866' ; HOOK. f., Fl. Brit. Ind. VII. p. 78 (1897) p.p. ; KOM., Fl. Mansh. I. p. 257 (1901 ; RENDL., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 335 1904 ; MATSUM., Ind. Pl. Jap. II. 1. p. 82 (1905) ; MATSUM. et HAY., Enum. Pl. Formos. p. 510 (1906' ; NAK., Fl. Kor. II. p. 350 (1911 ; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 316 (1912 ; HAY., Ic. Pl. Formos. VII. p. 67 (1918' ; MAK. et NEM., Fl. Jap. ed. 1. p. 1493 1925

Panicum glaucum, (non LINN. TRINIUS, Diss. II. p. 162 (1826 , et Sp. Gram. Ic. II. t. 195 (1829 ; STEUD., Syn. Glum. I. p. 50 (1855) ; BENTH., Fl. Hongk. p. 411 1861 ; FR. et SAV., Enum. Pl. Jap. II. p. 161 (1876

var. *genuina*, HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929 , et Monogr. Poac. Jap. Bamb. excl. p. 237 (1930 ; HITCHCOCK, in Lingn. Sc. Journ. VII. p. 227 (1929)

Syn. *Chaetochloa lutescens*, α *genuina*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 194 (1924' ; MAK. et NEM., Fl. Jap. ed. 2. p. 1331 (1931)

Nom. Jap. *Kinenokoro*

Leg. Ipse, 1926.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China.

Note. The variety is found in waste lands and by the roadside at low altitudes and is common throughout the world.

var. *longispica*, HONDA, Monogr. Poac. Jap. Bamb. excl. p. 238 (1930)

Syn. *Chaetochloa lutescens*, β *longispica*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 195 (1924); MAK. et NEM., Fl. Jap. ed. 1. p. 1498 (1925)

Setaria glauca, var. *longispica*, MAK. et NEM., Fl. Jap. ed. 1. p. 1498 (1925)

Nom. Jap. *Nagabono-kinenokoro*

Leg. Ipse, Koseda, 1924.

Distr. Honsyû, Kyûsyû, Taiwan, Korea.

Note. The variety is found in sunny waste lands and by the roadside.

Setaria viridis, BEAUV. var. *pachystachys*, MAK. et NEM. subvar. *typica*, MAK. et NEM., Fl. Jap. ed. 1. p. 1499 (1925¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 241 (1930)

Syn. *Setaria pachystachys*, var. *lanceolata*, HACK., ex MATSUM. in Tokyo Bot. Mag. XI. p. (443) (1897), et Ind. Pl. Jap. II. 1. p. 82 (1905)

Chaetochloa viridis, var. *pachystachys*, subvar. α *typica*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 198 (1924¹); MAK. et NEM., Fl. Jap. ed. 2. p. 1331 (1931)

Chaetochloa viridis, var. *pachystachys*, subvar. *lanceolata*, MAK. et NEM., Fl. Jap. ed. 1. p. 1499 (1925)

Nom. Jap. *Hama-enokoro*

Leg. Ipse, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. Occurs by the roadside, on waste lands, cultivated grounds, and on sandy beaches.

var. *purpurascens*, MAXIM., Prim. Fl. Amur. p. 330 (1859); TAKEDA, in Tokyo Bot. Mag. XXIV. p. 180 (1910); MORI, Enum. Pl. Cor. p. 55 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 242 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 121 (1931)

Syn. *Setaria purpurascens*, HUMBOLT, BOMPLAND et KUNTH, Nov. Gen. et Sp. I. p. 110 (1815), et Syn. Pl. I. p. 184 (1822); KUNTH, Enum. Pl. I. p. 151 (1833)

Setaria viridis, (non BEAUV.) MATSUM., Ind. Pl. Jap. II. 1. p. 83 (1905) p.p.

Setaria viridis, var. *purpurascens*, MAXIM., Prim. Fl. Amur. p. 330 (1859); TAKEDA, in Tokyo Bot. Mag. XXIV. p. 180 (1910)

Chaetochloa viridis, var. *purpurascens*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 197 (1924); MAK. et NEM., Fl. Jap. ed. 2. p. 1332 (1931¹)

Nom. Jap. *Murasaki-enokoro*

Leg. Ipse, Sept. 5, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, China, Siberia.

Note. Occurs by the roadside, in waste lands at low altitudes; common in the northern hemisphere.

Panicum, [LINN., Syst. ed. 1 (1735¹), et Gen. ed. 1. p. 17¹ (1737)] Sp. Pl. ed. 1. p. 55 (1753), et Gen. Pl. ed. 5. p. 29 (1754); KUNTH, Enum. Pl. I. p. 75 (1833); ENDL., Gen. Pl. n. 770 (1836-40); STEUD., Syn. Glum. I. p. 37 (1855) p.p.; BENTH. et HOOK. f., Gen. Pl. III. p. 1100 (1883); HACK., in ENGL. u. PRANT. Nat. Pl.-fam. II. ii. p. 35 (1887) p.p.

Syn. *Eatonia*, RAF., in Journ. de Phys. LXXXIX. p. 104 (1819)

- Panicum bisulcatum**, THUNB., in Nov. Act. Soc. Upsal. VII. p. 141 (1815); TANAKA in Bull. Soc. Fak. Terk. Kjušu. Imp. Univ. I. p. 195 (1925); HONDA, Monogr. Poa. Jap. Bamb. excl. p. 249 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1365 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 118 (1931)
- Syn.** *Panicum grossarium*, (non LINN.) THUNB., Fl. Jap. p. 48 (1784)
Panicum acroanthum, STEUD., Syn. Glum. I. p. 87 (1855; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 275 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 162 (1876); HACK., in Engl. Bot. Jahrb. VI. p. 49 (1885; HOOK. f., Fl. Brit. Ind. VII. p. 52 (1897); MATSUM. et HAY., Enum. Pl. Formos. p. 500 (1906); NAK., Fl. Kor. II. p. 346 (1911); HAY., Ic. Pl. Formos. VII. p. 64 (1918)
- Nom. Jap.** *Nukakibi*
- Leg.** KUDO! Kurio, Aug. 1907.
- Distr.** Yezo, Honsyû, Kyûsyû, Okinawa, Taiwan, Korea, China, India.
- Note.** Occurs in grasslands near the sea level; rather common in Japan, and is distributed all over the eastern hemisphere.
- Panicum repens**, LINN., Sp. Pl. ed. 2. p. 87 (1762; KUNTH, Enum. Pl. I. p. 103 (1833); BENTH., Fl. Hongk. p. 412 (1861; et Fl. Austr. VII. p. 434 (1873; HOOK. f., Fl. Brit. Ind. VII. p. 49 (1897; HACK., in Bull. Herb. Boiss. VII. p. 644 (1899); RENDL., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 332 (1904; MATSUM., Ind. Pl. Jap. II. 1. p. 71 (1905; MATSUM. et HAY., Enum. Pl. Formos. p. 505 (1906); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 315 (1912; MERR., Enum. Philipp. Pl. I. p. 67 (1922; et Enum. Hain. Pl. p. 32 (1927; HITCHCOCK, in Lingn. Sc. Journ. VII. p. 227 (1929; MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 250 (1930; MAK. et NEM., Fl. Jap. ed. 2. p. 1368 (1931
- Syn.** *Panicum ischaemoides*, RETZIUS, Obs. Bot. IV. p. 17 (1786; NEES, in HOOK. et ARNOT. Bot. Capt. Beech. Voy. pp. 233, 273 (1835-40; STEUDEL, Syn. Glum. I. p. 98 (1855; MIQ., Fl. Ind. Bat. III. p. 450 (1857
- Panicum arenarium*, BROTERO, Fl. Lusit. I. p. 82 (1804; et Phyt. Lusit. I. p. 15, t. 6 (1816; NEES, in HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 170 (1833; STEUD., Syn. Glum. I. p. 73 (1855
- Panicum convolutum*, BEAUV., ex SPRENG. Syst. I. p. 319 (1825; STEUD., Syn. Gl. p. 73 (1855)
- Nom. Jap.** *Haikibi*
- Leg.** Ipse, Kurio.
- Distr.** Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Malay, Philippines, India.
- Note.** Grows in the lowlands, on somewhat wet places, or on sandy beaches; common in south Japan.
- Panicum plicatum**, LAM., Ill. I. p. 171 (1791); KUNTH, Enum. Pl. I. p. 91 (1833); BENTH., Fl. Hongk. p. 411 (1861); HOOK. f., Fl. Brit. Ind. VII. p. 55 (1897); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 256 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1367 (1931)
- Syn.** *Panicum neurodes*, (non SPRENG.) HACKEL, in Bull. Herb. Boiss. VII. p. 644 (1899; MATSUM., Ind. Pl. Jap. II. 1. p. 71 (1905); MAK. et NEM., Fl. Jap. ed. 1. p. 1474 (1925)
- Setaria mauritiana*, SPRENGEL, Syst. Veg. I. p. 305 (1825; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 336 (1904)
- Panicum excurrens*, (non TRINIUS) FR. et SAV., Enum. Pl. Jap. II. p. 161 (1876); HACKEL, in Bull. Herb. Boiss. VII. p. 644 (1899; MATSUM., Ind.

Pl. Jap. II. 1. p. 69 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 502 (1906); HAY., Ic. Pl. Formos. VII. p. 64 (1918)

Setaria mariscus, MATSUDA, in Tokyo Bot. Mag. XXIV. p. 173 (1910)

Nom. Jap. *Sasa-kibi*

Leg. KIMURA! Aug. 10, 1922.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. The species occurs as an invader of clearings in the laurisilvae from the sea level up to about 800 m, and is distributed nearly all over tropical and subtropical regions of eastern Asia.

Sacciolepis, NASH, in BRITTON, Man. p. 80 (1901); HITCHCOCK, in Contrib. U. S. Nat. Herb. XVII. 3. p. 254 (1913)

Sacciolepis spicata, (LINN.) HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929), et Monogr. Poac. Jap. Bamb. excl. p. 261 (1930)

Syn. *Aira spicata*, LINN., Sp. Pl. ed. I. p. 63 (1753)

Panicum indicum, LINN., Mant. II. p. 184 (1771); ROXB., Fl. Ind. I. p. 285 (1832); KUNTH, Enum. Pl. I. p. 133 (1833); STEUDEL, Syn. Glum. I. p. 84 (1855); BENTH., Fl. Hongk. p. 413 (1861), et Fl. Austral. VII. p. 480 (1878); HOOK. f., Fl. Brit. Ind. VII. p. 41 (1897); HACK., in Bull. Herb. Boiss. VII. p. 644 (1899); PILGER, in Engl. Bot. Jahrb. XXIX. p. 223 (1901); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 330 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 70 (1905) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 503 (1906) p.p.; NAK., Fl. Kor. II. p. 347 (1911) p.p.; DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 315 (1912); HAY., Ic. Pl. Formos. VII. p. 61 (1918); MERR., Enum. Philipp. Pl. p. 64 (1922)

Panicum microstachyum, LAMARK, Ill. I. p. 170 (1791); KUNTH, Enum. Pl. I. p. 83 (1833)

Panicum angustum, TRINIUS, Sp. Gram. Ic. III. t. 334 (1836); STEUD., Syn. Glum. I. p. 84 (1855)

Hymenachne indica, BUHSE, ex MIQ., Fl. Ind. Bat. III. p. 458 (1855)

Panicum indicum, β *contractum*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 275 (1866) p.p.; FR. et SAV., Enum. Pl. Jap. II. p. 163 (1876) p.p.; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 350 (1904)

Panicum indicum, var. *angustum*, HOOK. f., Fl. Brit. Ind. VII. p. 42 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 330 (1904)

Sacciolepis indica, CHASE, in Proc. Biol. Soc. Washington XXI. p. 8 (1903); HONDA, in Tokyo Bot. Mag. XXXVII. p. 116 (1923); MAK. et NEM., Fl. Jap. ed. 2. p. 1392 (1931)

Panicum indicum, var. *oryzeturum*, (non MAK.) MORI, Enum. Pl. Cor. p. 49 (1922)

Nom. Jap. *Hainumeri*

Leg. Ipse, Onoaida, Jun. 23, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, India, Philippines.

Note. The plant occurs on wet ground or in somewhat swampy places from the sea level up to 600 m, and is common in eastern Asia.

Echinochloa, BEAUV., Ess. Agrost. p. 53 (1812); HITCHCOCK, in Contrib. U. S. Nat. Herb. XVII. 3. p. 256 (1913); LEMÉE, Dict. Gen. Pl. Phan. II. p. 789 (1930)

Syn. *Oplismenus*, Sect. *Echinochloa*, KUNTH, Enum. Pl. I. p. 142 (1833)

Panicum, Sect. *Echinochloa*, STEUDEL, Syn. Glum. I. p. 46 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1102 (1883); HACKEL, in ENGL. u. PRANT. Nat. Pfl.-fam. II. 2. p. 35 (1887)

Echinochloa crus-galli, BEAUV. Subsp. *hispidula*, RETZIUS HONDA, ex MASAMUNE Prel. Rep. Veg. Yak. p. 43 (1929), et Monogr. Poac. Jap. Bamb. excl. p. 267 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1339 (1931)

Syn. *Panicum hispidulum*, RETZ., Obs. Bot. V. p. 13 (1786); ROXB., Fl. Ind. I. p. 303 (1832); FR. et SAV., Enum. Pl. Jap. II. p. 160 (1876) p.p.

Oplismenus hispidulus, KUNTH, Enum. Pl. I. p. 143 (1833); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 274 (1866)

Panicum crus-galli, var. *hispidulum*, HACKEL, in Bull. Herb. Boiss. VII. p. 644 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 69 (1905); NAK., Fl. Kor. II. p. 347 (1911)

Panicum Crus-galli, subsp. *submutica*, var. *hispidula*, MAK. et NEM., Fl. Jap. ed. 1. p. 147 (1925)

Nom. Jap. Tabie

Leg. Ipse, Jul. 29, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. Occurs in rice fields, near stagnant water or on wet ground in the low lands; common in eastern Asia.

Oplismenus, BEAUV., Fl. d'Owar. II. p. 14 (1807-18); KUNTH, Enum. Pl. I. p. 138 (1833); ENDL., Gen. Pl. n. 778 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1104 (1883); HACKEL, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 36 (1887); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 870 (1932)

Syn. *Orthopogon*, R. BR., Prodr. Nov. Hukk. p. 194 (1810)

Panicum, Sect. *Orthopogon*, STEUD., Syn. Glum. I. p. 44 (1855)

Oplismenus Burmanni, BEAUV., Ess. Agrost. p. 54 (1812); KUNTH, Enum. Pl. I. p. 139 (1833); HOOK. f., Fl. Brit. Ind. VII. p. 63 (1897); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 270 (1930)

Syn. *Panicum hirtellum*, non LINN. BURMANN, Ind. p. 24, t. 12, f. 1 (1769)

Panicum Burmanni, RETZIUS, Obs. Bot. III. p. 10 (1783)

Orthopogon Burmanni, R. BR., Prodr. p. 194 (1810); MIQ., Fl. Ind. Bat. III. p. 442 (1855)

var. *intermedius*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 191 (1924), et Monogr. Poac. Jap. Bamb. excl. p. 270 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929)

Syn. *Oplismenus undulatifolius*, (non BEAUV.) MATSUM. et HAY., Enum. Pl. Formos. p. 509 (1906); HAY., Ic. Pl. Formos. VII. p. 66 (1918)

Oplismenus undulatifolius, var. *imbecillis*, (non HACKEL) HAY., in Tokyo Bot. Mag. XXI. p. 50 (1907)

Nom. Jap. Taiton-kobunagusa

Leg. Ipse, 1928.

Distr. Taiwan.

Note. The species is often found in the laurisilvae on somewhat sunny ground, or on forests edges and is not reported in any place except in Formosa and this island.

Opismenus compositus, BEAUV., Ess. Agrost. p. 54 (1812); ROEM. et SCHULT., Syst. Veg. II. p. 484 (1817); KUNTH, Enum. Pl. I. p. 141 (1833); BENTH., Fl. Austr. VII. p. 491 (1878); HOOK. f., Fl. Brit. Ind. VII. p. 66 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 337 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 67 (1905) partim.; MATSUM. et HAY., Enum. Pl. Formos. p. 509 (1906) p.p.; HAY., Ic. Pl. Formos. VII. p. 66 (1918) p.p.; MERR., Enum. Philipp. Pl. I. p. 71 (1922), et Enum. Hainan Pl. p. 32 (1927); HITCHCOCK, in Lingn. Sc. Journ. VII. p. 223 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 271 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1363 (1931)

Syn. *Panicum compositum*, LINN., Sp. Pl. ed. 1. p. 57 (1753); STEUD., Syn. Glum. I. p. 44 (1855); BENTH., Fl. Hongk. p. 411 (1861)

Orthopogon compositus, R. BR., Prodr. p. 194 (1810); MIQ., Fl. Ind. Bat. III. p. 443 (1855)

Opismenus hirtellus, BEAUV., Ess. Agrost. pp. 54, et 168 (1812); ROEMER et SCHULTES, Syst. Veg. II. p. 481 (1817); KUNTH, Enum. Pl. I. p. 140 (1833)

Opismenus loliaceus, BEAUV., Ess. Agrost. p. 170 (1812); HUMBOLT, BONPLAND et KUNTH, Syn. Pl. I. p. 181 (1822); KUNTH, Enum. Pl. I. p. 140 (1833)

Nom. Jap. *Edauti-tizimizasa*

Leg. Ipse, Aug. 7, 1924.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines.

Note. As undergrowth the species is often found in the laurisilvae and is common in all the warmer parts of the earth.

Opismenus japonicus, HONDA, in Tokyo Bot. Mag. XXXVIII. pp. 153, et 189 (1924), et Monogr. Poac. Jap. Bamb. excl. p. 273 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929); MAK. et NEM., Fl. Jap. ed. 1. p. 1466 (1925, et ed. 2. p. 1363 (1931)

Syn. *Panicum japonicum*, STEUD., in Flora XXIX. p. 18 (1846)

Opismenus Burmanni, (non BEAUV.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 274 (1866); HOOK. f., Fl. Brit. Ind. VII. p. 68 (1897) p.p.; MATSUM., Ind. Pl. Jap. II. 1. p. 67 (1905) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 508 (1906); NAK., Fl. Kor. II. p. 349 (1911)

Panicum Burmanni, (non RETZIU.) FR. et SAV., Enum. Pl. Jap. I. p. 160 (1876)

Opismenus undulatifolius, var. *japonicus*, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 302 (1925)

Nom. Jap. *Kotizimizasa*

Leg. Ipse, Aug. 11, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea.

Note. Grows in the laurisilvae and the lauri-aciculisilvae as undergrowth; is restricted to Japan.

Opismenus microphyllus, HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929), et Monogr. Poac. Jap. Bamb. excl. p. 274 (1930)

Nom. Jap. *Tyabo-tizimizasa*

Leg. Ipse, Kosugidani, Aug. 31, 1931.

Distr. Honsyû, Kyûsyû.

Note. In mountain passes, clearings, and waste lands, the species enters as one of the pioneers, but the plant is also found in somewhat shady places in the laurisilvae and the lauri-aciculisilvae.

Isachne, R. BR., Prodr. p. 193 (1810); KUNTH, Enum. Pl. I. p. 135 (1833); ENDL., Gen. Pl. n. 773 (1833-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1100 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 35 (1887); LEMÉE, Dict. Gen. Pl. Phan. III. p. 767 (1931)

Isachne globosa, O. KUNTZ., Rev. Gen. Pl. II. p. 778 (1891); MERR., Enum. Philipp. Pl. I. p. 59 (1922), et Enum. Hainan Pl. p. 30 (1927); MASAM., Prel. Rep. Veg. Yak. p. 43 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 279 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1352 (1931)

Syn. *Milium globosum*, THUNB., Fl. Jap. p. 49 (1784); WILLD., Sp. Pl. I. p. 360 (1797); ROEM. et SCHULT., Syst. Veg. II. p. 321 (1817); STEUD., Syn. Glum. I. p. 34 (1855)

Isachne australis, R. BR., Prodr. p. 196 (1810); KUNTH, Enum. Pl. I. p. 135 (1833); BENTH., Fl. Hongk. p. 414 (1851); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 276 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 164 (1876); HACK., in Engl. Bot. Jahrb. VI. p. 50 (1885), et in Bull. Herb. Boiss. VII. p. 643 (1899); HOOK. f., Fl. Brit. Ind. VII. p. 24 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 321 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 60 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 493 (1905); NAK., Fl. Kor. II. p. 346 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 313 (1912); YABE, Enum. Pl. Manch. p. 14 (1912); HAY., Ic. Pl. Formos. VII. p. 57 (1918)

Eriochloa globosa, KUNTH, Rev. Gram. I. p. 30 (1829)

Agrastis globosa, POIR., in LAM. Encycl. Supp. I. p. 257 (1832)

Panicum lepidotum, STEUD., in Flora XXIX. p. 19 (1846), et Syn. Glum. I. p. 95 (1855); A. GRAY, Pl. Jap. p. 329 (1856)

Eriochloa japonica, KUNTH, ex STEUD., Syn. Glum. I. p. 99 (1855)

Isachne Clarkei, (non J. D. HOOK.) HAY., Fl. Mont. Formos. p. 234 (1903)

Isachne globosa, (non O. KUNTZE,) TANAKA, in Bult. Sci. Fakult. Terkult Kjušu. Imp. Univ. I. p. 196 (1925)

Nom. Jap. *Tigo-zasa*

Leg. Onoaida, Jun. 23, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Malay, India, Philippines.

Note. Occurs in the low lands, in ditches among rice fields; distributed nearly all over Asia, Malaya, and Australia.

Isachne myosotis, NEES, var. *minor*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 58 (1924), et Monogr. Poac. Jap. Bamb. excl. p. 231 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1352 (1931)

Nom. Jap. *Hina-tigozasa*

Leg. Ipse, Kosugidani, Jul. 23, 1928.

Distr. Okinawa.

Note. The species is found by the side of newly made road, in clearings, and in the lauri-aciculisilvae at about 600 m above the sea level; this variety is restricted to Okinawa and Yakusima.

Paspalum, LINN., Syst. Nat. ed. 10 p. 855 (1759); KUNTH, Enum. Pl. I. p. 40 (1833); ENDL., Gen. Pl. n. 761 (1836-40); STEUD., Syn. Glum. I. p. 16 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1037 (1883);

HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 33 (1887); HOOK. f., Fl. Brit. Ind. VII. p. 10 (1897)

Syn. *Sabsab*, ADANS., Fam. II. p. 31 (1763)

Paspalum scrobiculatum, LINN., Mant. p. 29 (1767), et Pflanzensyst. XII. p. 216, t. 89, f. 3 (1785); ROXB., Fl. Ind. I. p. 278 (1832); KUNTH, Enum. Pl. I. p. 53 (1833); STEUD., Syn. Glum. I. p. 21 (1855); BENTH., Fl. Hongk. p. 408 (1861); HOOK. f., Fl. Brit. Ind. VII. p. 10 (1897); HACK., in Bull. Herb. Boiss. VII. p. 721 (1899); PILG., in DIELS Fl. Cent. Chin. p. 223 (1900); RENDL., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 320 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 73 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 497 (1906); HAY., Ic. Pl. Formos. VII. p. 53 (1918); MERR., Enum. Philipp. Pl. I. p. 56 (1922); HITCHCOCK, in Lingn. Sc. Journ. VII. p. 216 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 285 (1930)

Syn. *Paspalum kora*, WILLD., Sp. Pl. I. p. 332 (1797)

Paspalum cartilagineum, PRESL, Rel. Haenk. II. p. 1216 (1828); MIQ., Fl. Ind. Bat. III. p. 432 (1857)

Paspalum Thunbergii, var. *minor*, MAK., in Tokyo Bot. Mag. VI. pp. (48), et 128 (1892)

Paspalum scrobiculatum, var. *orbiculare*, MAK., in Tokyo Bot. Mag. X. p. 60 (1896); MAK. et NEM., Fl. Jap. ed. 2. p. 1370 (1931)

Nom. Jap. *Suzume-no-kobie*

Leg. Ipse, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, China, Philippines, India.

Note. Occurs by the roadside and in waste lands.

Paspalum Thunbergii, KUNTH, ex STEUD. Syn. Glum. I. p. 28 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. pp. 130, 273 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 159 (1876); HACK., in Bull. Herb. Boiss. VII. p. 643 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 73 (1905); NAK., Rep. Veg. Is. Quelp. p. 17 (1914); LOESN., Pfl.-welt. Kiautsch. Geb. p. 87 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 286 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1370 (1931); MIY. et KUDO, Fl. Hokk. & Saghal. II. p. 113 (1931)

Syn. *Paspalum dissectum*, (non LINN.) THUNB., Fl. Jap. p. 45 (1784)

Paspalum scrobiculatum, var. *Thunbergii*, MAK., in Tokyo Bot. Mag. X. p. 60 (1896)

Nom. Jap. *Suzumenohie*

Leg. Ipse, Jul. 20, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. The species is found by the roadside, in the low lands, and in waste lands. It is a pan-eastasiatic species.

Eriochloa, HUMBOLT, BONPL. et KUNTH, Nov.

Gen. et Sp. I. p. 94 tt. 30 et 31 (1815); KUNTH, Enum. Pl. I. p. 71 (1833); ENDL., Gen. Pl. n. 767 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1039 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 35 (1887); LEMÉE, Dict. Gen. Pl. Phan. II. p. 923 (1930)

Syn. *Monachne*, BEAUV., Ess. Agrost. p. 49 t. 10 (1812)

Helopus, TRINIUS, Fund. Agrost. p. 103 (1820); STEUD., Syn. Glum. I. p. 99 (1855)

Eriochloa villosa, KUNTH, Rev. Gram. I. p. 203, t. 13 (1829), et Enum. Pl. I. p. 72 (1833); FR. et SAV., Enum. Pl. II. p. 164 (1876); FR., Pl. David. I. p. 322 (1884); HACK., in Engl. Bot. Jahrb. VI. p. 49 (1885); KOM., Fl. Mansh. I. p. 253 (1901); PILG., in DIELS, Fl. Cent. Chin. p. 223 (1900); RENDL., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 320 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 55 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 498 (1906); NAK., Fl. Kor. II. p. 346 (1911); HAY., Ic. Pl. Formos. VII. p. 55 (1918); LOESN., Pfl.-welt. Kiautsch. Geb. p. 87 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 289 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1343 (1931)

Syn. *Paspalum villosum*, THUNB., Fl. Jap. p. 45, t. 8 (1784); MAXIM., Prim. Fl. Amur. p. 327 (1859); FR., in Mem. Soc. Sci. Nat. Cherb. XXIV. p. 267 (1884)

Helopus villosus, NEES, in MARTIUS, Fl. Bras. II. p. 17 (1829); STEUD., Syn. Glum. I. p. 100 (1855); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 276 (1866)

Panicum tuberculiflorum, STEUD., Syn. Glum. I. p. 59 (1855)

Eriochloa villosa, form. *distachya*, HACK., in Engl. Bot. Jahrb. VI. p. 49 (1885)

Nom. Jap. *Naruko-bie*

Leg. Ipse, Aug. 18, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species grows in cultivated lands, and in waste lands, and is restricted to the Sino-Japanese region.

Syntherisma, WALTER, Fl. Carol. p. 76 (1783);

HITCHCOCK, in Contrib. U. S. Nat. Herb. VII. 3. p. 319 (1913)

Syn. *Digitaria*, non HEISTER nec ADANSON HALLER, Stirp. Helv. II. p. 244 (1768); MIQ., Fl. Ind. Ba. III. p. 435 (1855); RICHARD, in PERSOON, Syn. Pl. I. p. 84 (1805)

Panicum, Sect. *Digitariae*, KUNTH, Enum. Pl. I. p. 80 (1833)

Panicum, Sect. *Digitaria*, BENTH. et HOOK. f., Gen. Pl. III. p. 1101 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 35 (1887)

Syntherisma ischaemum, NASH., N. Amer. Fl. XVII. p. 151 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 292 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 115 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1407 (1931)

Syn. *Panicum filiforme*, (non LINN.) THUNB., Fl. Jap. p. 48 (1784)

Panicum lineare, (non LINN.) KROCKER, Fl. Siles. I. p. 95 (1787); NAK., Fl. Kor. II. p. 349 (1911)

Digitaria humifusa, PERSOON, Syn. Pl. I. p. 85 (1805); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 324 (1904); YABE, Enum. Pl. Manch. p. 13 (1912)

Paspalum ambiguum, A. P. DC., Fl. Gall. p. 123 (1806); HOOK. f., Fl. Brit. Ind. VII. p. 17 (1897)

Panicum glabrum, GAUDIN, Agrost. Helvet. I. p. 22 (1811); TRINIUS, Sp. Gram. Ic. II. t. 149 (1829); KUNTH, Enum. Pl. I. p. 83 (1833); STEUD., Syn. Glum. I. p. 41 (1855); MAK., in Tokyo Bot. Mag. X. p. 314 (1896); HACK., in Bull. Herb. Boiss. VII. p. 643 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 70 (1905)

Digitaria glabra, BEAUV., Agrost. p. 51 (1812); ROEM. et SCHULT., Syst. Veg. II. p. 471 (1817); MAXIM., Prim. Fl. Amur. p. 328 (1859)

Digitaria violascens, LINK, Hort. I. p. 229 (1827); MERR., in Philipp. Journ. Bot. p. 347 (1905); HAY., Ic. Pl. Formos. VII. p. 65 (1918)

Panicum violascens, KUNTH, Rev. Gram. I. p. 331 (1829); STEUD., Syn. Glum. I. p. 42 (1855); HACK., in Bull. Herb. Boiss. VII. pp. 643, 721, (1899), 2 sér. III. p. 501 (1903), et IV. p. 523 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 73 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 503 (1905); NAK., Fl. Kor. II. p. 348 (1911)

Paspalum filiculme, NEES ex MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 274 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 159 (1876)

Paspalum filiforme, (non SWARTZ.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 274 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 159 (1876)

Digitaria linearis, ROSTAF, in Verh. Zool. Bot. Ges. Wien. XXII. p. 99 (1872); KOM., Fl. Mansh. I. p. 254 (1901)

Nom. Jap. *Aki-mehiziwa*

Leg. Ipse, Jul. 20, 1927.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China, Amur, Ussuri, Philippines.

Note. Occurs in low lying waste lands and by the roadside; common in Japan.

Syntherisma sanguinalis, DULAC, var. *ciliaris*, HONDA, in Tokyo Bot. Mag. XXXVIII. p. 120 (1924), et Monogr. Poac. Jap. Bamb. excl. p. 295 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1407 (1931)

Syn. *Panicum ciliare*, RETZIUS, Obs. IV. p. 16 (1786); R. BR., Prodr. I. p. 192 (1810); ROXB., Fl. Ind. I. p. 293 (1832); KUNTH, Enum. Pl. I. p. 82 (1833); STEUD., Syn. Glum. I. p. 39 (1855); FR., in Mem. Sc. Nat. Cherb. XIV. p. 267 (1884) *Digitaria ciliaris*, PERSOON, Syn. Pl. I. p. 85 (1805); MIQ., Fl. Ind. Bat. III. p. 436 (1855), et in Ann. Mus. Bot. Lugd. Bat. II. p. 276 (1866)

Digitaria commutata, SCHULT., Mant. II. p. 262 (1824); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 276 (1866)

Panicum commutatum, NEES, in HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 232 (1836-40); BENTH., Fl. Hongk. p. 410 (1861); FR. et SAV., Enum. Pl. Jap. II. p. 163 (1876)

Digitaria sanguinalis, var. *ciliaris*, DOELL., Rhein. Fl. p. 126 (1843); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 325 (1904)

Panicum sanguinale, var. *ciliare*, GRENIER et GODRON, Fl. III. p. 451 (1856); MAK., in Tokyo Bot. Mag. X. pp. 66, et (314) (1896), et XXIV. p. 320 (1910); HACK., in Bull. Herb. Boiss. VII. pp. 643, et 723 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 72 (1905) p.p.

Paspalum sanguinale, var. *ciliare*, HOOK. f., Fl. Brit. Ind. VII. p. 15 (1897)

Digitaria sanguinalis, (non SCOPOLI) HAY., Ic. Pl. Formos. VII. p. 65 (1918) p.p.

Syntherisma sanguinalis, (non DULAC.) HONDA, in Tokyo Bot. Mag. XXXVIII. p. 119 (1924) p.p.

Nom. Jap. *Me-hiziwa*

Leg. Ipse, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Africa, Australia, Europe.

Note. Occurs in waste lands, and by the roadside at low altitudes.

Spinifex, LINN., Mant. II. p. 163 (1771); KUNTH, Enum. Pl. I. p. 174 (1833); ENDL., Gen. Pl. n. 791 (1836-40); STEUD., Syn. Glum.

I. p. 113 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1109 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 38, f. 34 (1887)

Spinifex littoreus, MERR., in Philipp. Journ. Sc. VII. p. 229 (1912, Fl. Manila, p. 97 (1912), Sp. Balnc. p. 69 (1918), et Enum. Philipp. Pl. I. p. 76 (1922); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 302 (1980)

Syn. *Stipa spinifex*, LINN., Mant. I. p. 34 (1767)

Stipa littorea, N. L. BURMAN, Fl. Ind. p. 29 (1768)

Spinifex squarrosus, LINN., Mant. II. p. 300 (1771); KUNTH, Enum. Pl. I. p. 175 (1833); STEUD., Syn. Glum. I. p. 113 (1855); BENTH., Fl. Hongk. p. 415 (1861); HACK., in Engl. Bot. Jahrb. VI. p. 50 (1885, et in Bull. Herb. Boiss. 2 sér. IV. p. 528 (1904); HOOK. f., Fl. Brit. Ind. VII. p. 63 (1897); RENDLE, in FORB. et HEMS. Ind. Fl. Sin. III. p. 340 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 83 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 513 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 317 (1912); HAY., Ic. Pl. Formos. VII. p. 66 (1918); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1403 (1931)

Nom. Jap. *Tuki-ige*

Leg. Ipse, Kurio, Jul. 4, 1928.

Distr. Tanegasima, Amami-Ōsima, Okinawa, Taiwan, China, Philippines.

Note. The plant grows on sandy beaches and forms a consociation. This tropic and subtropic littoral plant has its northern limit in Tanegasima and Yakusima. From this point of view the Ōsumi-Strait has deep significance since the strait has prevented the distribution of this plant.

Arundinella, RADDI, Agrost. Bras. p. 37, t. 1 (1823); ENDL., Gen. Pl. n. 951 (1836-40); STEUD., Syn. Glum. I. p. 114 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1118 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 32 (1887); LEMÉE, Dict. Gen. Pl. Phan. I. p. 403 (1929)

Arundinella hirta, TANAKA, in Bult. Sci. Fakul. Terkult. Kjušu. Imp. Univ. I. 4. p. 196 (1925)

Syn. *Poa hirta*, THUNB., Fl. Jap. p. 49 (1784); STEUD., Syn. Glum. I. p. 256 (1855)

Arundinella anomala, (non STEUD.) YABE, in Tokyo Bot. Mag. XVII. p. 125 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 40 (1905) p.p.; MAK. et NEM., Fl. Jap. ed. 1. p. 1426 (1925)

Arundinella anomala, var. *lasiophylla*, HACK., ex NAK. Rep. Veg. Isl. Quel. p. 16 (1914); MORI, Enum. Pl. Cor. p. 38 (1922)

Arundinella hirta, (non TANAKA) KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 302 (1925); MAK. et NEM., Fl. Jap. ed. 2. p. 1312 (1931)

Arundinella hirta, var. *Hondana*, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 303 (1925)

var. typica, HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929, et Monogr. Poac. Jap. Bamb. excl. p. 305 (1930)

Nom. Jap. *Ke-to-tasiba*

Leg. Ipse, Jul. 21, 1924.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Korea.

Note. The species grows by the roadside, and in waste lands, and it is a pioneer in the land when the laurisilvae are cleared.

Zoysia, (*Zoisia*) WILLD., in Gesells. Nat. Fr. Berlin Schrift III. p. 440 (1801); KUNTH, Enum. Pl. I. p. 471 (1833); ENDL., Gen. Pl. n. 935 (1836-40); STEUD., Syn. Glum. I. p. 414 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1124 (1883)

Syn. *Osterdamia*, NECKER, Elem. Bot. III. p. 218 (1790); O. KUNTZE, Rev. Gen. Pl. II. p. 781 (1891)

Zoysia japonica, STEUD., Syn. Glum. I. p. 414 (1855); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 314 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 111 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1412 (1931)

Syn. *Zoysia pungens*, (non WILLD.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 288 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 186 (1876); KOM., Fl. Mansh. I. p. 251 (1901); MATSUM. et HAY., Enum. Pl. Formos. p. 516 (1906) p.p.; NAK., Fl. Kor. II. p. 344 (1911)

Zoysia pungens, var. *japonica*, HACK., in Bull. Herb. Boiss. VII. p. 642 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 87 (1905)

Osterdamia japonica, HITCHCOCK, in U. S. Dept. Agric. Bull. 772, pp. 166, et 288 (1920); HONDA, in Tokyo Bot. Mag. XXXVI. p. 112 (1922); MAK. et NEM., Fl. Jap. ed. 1. p. 1367 (1925)

Nom. Jap. *Siba*

Leg. Ipse, Jul. 25, 1927.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Bonins, Manchuria, China.

Note. The species grows on somewhat sandy ground caused by the crumbling of granite at high altitudes.

Zoysia macrostachya, FR. et SAV., Enum. Pl. II. pp. 187, et 603 (1876); HACK., in Bull. Herb. Boiss. VII. p. 642 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 87 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 316 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1412 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 112 (1931)

Syn. *Ischaemum muticum*, (non LINN.) HACK., ex MATSUM. in Tokyo Bot. Mag. XI. p. 442 (1897); HACK., in Bull. Herb. Boiss. VII. p. 641 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 61 (1905)

Osterdamia macrostachya, HONDA, in Tokyo Bot. Mag. XXXVI. p. 114 (1922) p.p.; MAK. et NEM., Fl. Jap. ed. 1. p. 1468 (1925)

Nom. Jap. *Oni-siba*

Leg. Ipse, Jul. 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima.

Note. The plant occurs in littoral sandy beaches and sometimes forms a con-sociation. The plant is restricted to the above cited districts and has its southern limit in Amami-Ôsima.

Zoysia tenuifolia, TRINIUS, in Mem. Acad. St. Petersburg. ser. 6 pt. 4. Sci. Nat. 2. p. 96 (1835); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 318 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1412 (1931)

Syn. *Zoysia tenuifolia*, (non TRINIUS) WILLD., ex STEUD. Syn. Glum. p. 414 (1855); MATSUM., Ind. Pl. Jap. II. 1. p. 87 (1905) p.p.

Zoysia pungens, var. *tenuifolia*, MAK., in Tokyo Bot. Mag. XII. p. 228 (1898)

Osterdamia tenuifolia, O. KUNTZE, Rev. Gen. Pl. II. p. 781 (1891); HITCHCOCK, in U. S. Dept. Agric. Bull. 772, p. 166 (1920)

Osterdamia Zoisia, α *typica* et β *tenuifolia*, HONDA, in Tokyo Bot. Mag. XXXVI. p. 113 (1922)

Nom. Jap. *Ito-siba*

Leg. Ipse, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, Java.

Note. The species is found in the littoral regions.

Dimeria, R. BR., Prodr. p. 204 (1810 ; KUNTH, Enum. Pl. I. p. 471 (1833 ; ENDL., Gen. Pl. n. 936 (1836-40 ; STEUD., Syn. Glum. I. p. 412 (1855 ; BENTH. et HOOK. f., Gen. Pl. III. p. 1128 (1883 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 22 (1887), et DC. Monogr. Phan. VI. p. 76 (1889) ; LEMÉE, Dict. Gen. Pl. Phan. II. p. 626 (1930

Syn. *Haplachne*, J. S. PRESL, in C. B. PRESL Rel. Haenk. I. p. 234 t. 38 (1830

Dimeria ornithopoda, TRINIUS, var. *yakushimensis*, HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929 ; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 325 (1930)

Nom. Jap. *Yakusima-karimatagaya*

Leg. Ipse, Aug. 30, 1926.

Distr. Endemica.

Note. Occurs in marshy places from 1600 m up to 1800 m above the sea level.

Arthraxon, BEAUV., Ess. Agrost. p. 111 t. 11 f. 2 (1812 ; ENDL., Gen. Pl. n. 937 (1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 1128 (1883 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 26 (1887, et in DC. Monogr. Phan. VI. p. 345 (1889 ; LEMÉE, Dict. Gen. Pl. Phan. I. p. 395 (1929

Arthraxon hispidus, MAK., in Tokyo Bot. Mag. XXVI. p. 214 (1912 *emend* ; KOIDZ., Fl. Symb. As. p. 70 (1930 ; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 111 (1931)

Syn. *Phalaris hispida*, THUNB., Fl. Jap. p. 44 (1784 ; WILLD., Sp. Pl. I. p. 330 (1797 ; ROEM. et SCHULT., Syst. Veg. II. p. 407 (1817 ; MERR., in Philipp. Journ. Sc. VII. p. 229 (1912 ; HITCHCOCK, in Lingn. Sc. Journ. VII. p. 241 (1929

Chilochloa hispida, BEAUV., Ess. Agr. p. 158 (1812

Leersia hispida, THUNB., Pl. Jap. Nov. Sp. p. 5 (1824

Digitaria hispida, SPRENGL., Syst. Veg. I. p. 271 (1825

Arthraxon japonicus, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 288 (1866

Arthraxon ciliaris, subsp. *Langsdorfii*, var. *cryptatherus*, HACK., in DC. Monogr. Phan. VI. p. 355 (1889 ; MAK., in Tokyo Bot. Mag. X. p. 66 (1896

Arthraxon ciliaris, subsp. *nudus*, HACK., in DC. Monogr. Phan. VI. p. 356 (1889), et in Bull. Herb. Boiss. sér. 2. IV. p. 527 (1904 ; MATSUM., Ind. Pl. Jap. II. 1. p. 40 (1905 ; MATSUM. et HAY., Enum. Pl. Formos. p. 523 (1906

Arthraxon ciliaris, var. *cryptatherus*, HACK., in Bull. Herb. Boiss. VII. p. 642 (1899

Arthraxon hispidus, (non MAK.) MERR., in Philipp. Journ. Sc. VII. p. 229 (1912

Arthraxon ciliaris, var. *Langsdorfii*, HACK., apud HAY. Ic. Pl. Formos. VII. p. 79 (1918

Arthraxon hispidus, (non MAK. nec MERR.) TANAKA, in Bull. Sc. Fakul. Terk. Kjusû. Imp. Univ. I. p. 194 (1925)

Arthraxon hispidus, var. *cryptatherus*, HONDA, in Tokyo Bot. Mag. XXXIX. p. 277 (1925

Arthraxon cryptatherus, KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 301 (1925)

(includ. subsp. *nutus* et *submuticus*); MAK. et NEM., Fl. Jap. ed. 2. p. 1311 (1931)

var. **typicus**, HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929), et **Monogr.** Poac. Jap. Bamb. excl. p. 326 (1930)

Nom. Jap. *Siro-kobunagusa*

Leg. Ipse, Jun. 26, 1928.

Distr. Yezo, Honsyû, Siko'ku, Kyûsyû, Okinawa, Taiwan, China, Philippines.

Note. Occurs in the laurisilvae and is widely distributed in Eastern Asia.

Cymbopogon, SPRENG., Pugill. II. p. 14 (1815);

HONDA, Monogr. Poac. Jap. Bamb. excl. p. 337 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 453 (1930)

Syn. *Andropogon*, Subgen. *Cymbopogon*, NEES, Fl. Afr. Austral. I. p. 109 (1841); STEUDEL, Syn. Glum. I. p. 383 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1134 (1833); HACK., in DC. Monogr. Phan. VI. p. 592 (1839)

Cymbopogon Goeringii, HONDA, in Tokyo Bot. Mag. XL. p. 105 (1926), et **Monogr.** Poac. Jap. Bamb. excl. p. 337 (1930); MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1335 (1931)

Syn. *Andropogon Goeringii*, STEUD., in Flora p. 22 (1846)

Andropogon Iwarankusa, (non BLAN.) STEUD., Syn. Glum. I. p. 383 (1855)

Andropogon Schoenanthus, (non LINN.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 290 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 191 (1876)

Andropogon Nardus, subsp. *marginatus*, var. *Goeringii*, HACK., in DC. Monogr. Phan. VI. p. 607 (1889); PALIB., Conspect. Fl. Kor. p. 130 (1901)

Andropogon Nardus, var. *Goeringii*, HACK., in Bull. Herb. Boiss. VII. p. 642 (1899), 2. sér. IV. p. 527 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 37 (1905); NAK., Fl. Kor. II. p. 343 (1911), et in Tokyo Bot. Mag. XXVI. pp. 9. et 46 (1912)

Cymbopogon Nardus, subsp. *marginatus*, var. *Goeringii*, RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 376 (1904); MATSUM. et HAY., Enum. Pl. Formos. VII. p. 82 (1918)

var. **genuinus**, HONDA, Monogr. Poac. Jap. Bamb. excl. p. 338 (1930)

Nom. Jap. *Ogarukaya*

Leg. Ipse, Miyanoura, Sept. 1, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Bonins, Korea, China, Philippines.

Note. The species grows on dry ground at low altitudes as a pioneer in waste lands and clearings. It is widely distributed in the tropics and subtropics of the old world.

Andropogon, LINN., Sp. Pl. ed. 1. p. 1045 (1753)

p.p., et Gen. Pl. ed. 5. p. 463 (1754); KUNTH, Enum. Pl. I. p. 435 (1833) p.p.; ENDL., Gen. Pl. n. 950 (1836-40); STEUD., Syn. Glum. I. p. 363 (1855) p.p.; BENTH. et HOOK. f., Gen. Pl. III. p. 1133 (1883) p.p.; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 26 (1837), et in DC. Monogr. Phan. VI. p. 359 (1889) p.p.; LEMÉE, Dict. Gen. Pl. Phan. I. p. 252 (1929) p.p.

Andropogon micranthus, KUNTH, Rev. Gram. I. p. 165 (1829), et Enum. Pl. I. p. 504 (1833); STEUD., Syn. Glum. I. p. 396 (1855); HACK., in DC. Monogr. Phan. VI. p. 488 (1889), et in Bull. Herb. Boiss. 2 sér. III. p. 501 (1903); HOOK. f., Fl. Brit.

Ind. VII. p. 178 (1897); RENDLE, in Forb. et HEMSL. Ind. Fl. Sin. III. p. 374 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 529 (1906); NAK., Fl. Kor. II. p. 343 (1911); DUNN et TUTCH., Fl. Kwangt. & Hongk. p. 323 (1912); YABE, Enum. Pl. Manch. p. 12 (1912); MATSUDA, in Tokyo Bot. Mag. XXVIII. p. 317 (1914); HAY., Ic. Pl. Formos. VII. p. 80 (1918); LOESN., Pfl.-welt. Kiautsch. Geb. p. 86 (1918); MERR., Enum. Philipp. Pl. I. p. 46 (1922), et Enum. Hainan Pl. p. 28 (1927); HITCHCOCK, in Lingn. Sc. Journ. VII. p. 244 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 41 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 343 (1930)

Syn. *Holcus parviflorus*, R. BR., Prodr. p. 199 (1810)

Sorghum parviflorum, BEAUV., apud ROEM. et SCHULT. Syst. Veg. II. p. 840 (1817)

Anatherum parviflorum, SPRENG., Syst. Veg. I. p. 290 (1825)

Andropogon violascens, TRINIUS, in Mem. Acad. Petersb. sér. 6 II. p. 319 (1833); MAK., in Tokyo Bot. Mag. X. p. 66 (1895)

Andropogon violascens, NEES, ex STEUDEL Syn. Glum. I. p. 396 (1855); MAK. et NEM., Fl. Jap. ed. 2. p. 1309 (1931)

Andropogon capilliflorus, STEUD., in ZOLLING. Syst. Veg. p. 58 (1854-55), et Syn. Glum. I. p. 297 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 192 (1876)

Andropogon assimilis, STEUD., Syn. Glum. I. p. 397 (1855); HOOK. f., Fl. Brit. Ind. VII. p. 179 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 370 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 36 (1905)

Andropogon serratus, (non THUNB.) MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 290 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 192 (1876)

Andropogon micranthus, var. *genuinus*, HACK., in DC. Monogr. Phan. VI. p. 489 (1889); MATSUM., Ind. Pl. Jap. II. 1. p. 37 (1905)

Andropogon mucranthus, var. *spicigerus*, HACK., in Bull. Herb. VII. p. 642 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 37 (1905)

Nom. Jap. *Hime-abura-susuki*

Leg. Ipse, Jun. 23, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, Africa, Australia.

Note. Occurs in the low lands, waste lands and near cultivated lands.

Ischaemum, [LINN., Gen. Pl. ed. 2. p. 525 (1742.) et Sp. Pl. ed. 1. p. 1049 (1753); KUNTH, Enum. Pl. I. p. 511 (1833); ENDL., Gen. Pl. n. 951 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1132 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 26 (1887), et in DC. Monogr. Phan. VI. p. 200 (1889) p.p.; LEMÉE, Dict. Gen. Pl. Phan. III. p. 770 (1931)]

Syn. *Schoenanthus*, ADANS., Fam. II. p. 38 (1763)

Andropogon, Sect. *Ischaemonaca*, STEUD., Syn. Glum. I. p. 374 (1855)

Ischaemum anthephroides, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 193 (1876); HACK., in DC. Monogr. Phan. VI. p. 216 (1889)

var. **eristachyum**, HONDA, ex MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929), et Monogr. Poac. Jap. Bamb. excl. p. 352 (1930); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 110 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1353 (1931)

Syn. *Andropogon caricosus*, (non LINN.) THUNB., Fl. Jap. p. 39 (1784)

Ischaemum barbatum, (non RETZIUS) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 291 (1866)

Ischaemum anthephroides, (non MIQ.) FR. et SAV., Enum. Pl. Jap. II. p. 193

(1876) p.p.; HACK., in Bull. Herb. Boiss. VII. p. 641 (1899; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 364 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 60 (1905)

Ischaemum eriostachyum, HACK., in DC. Monogr. Phan. VI. p. 218 (1889), et in Bull. Herb. Boiss. 2 sér. IV. p. 523 (1904); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 365 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 61 (1905)

Ischaemum antheophroides, f. *minor*, HACK., in Bull. Herb. Boiss. VII. p. 641 (1899)

Ischaemum Sieboldii, (non MIQ.) NAK., Fl. Kor. II. p. 342 (1911; LOESN., Pfl.-welt. Kiautsch. Geb. p. 86 (1918)

Nom. Jap. *Ke-kamonohasi*

Leg. Ipse, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. The plant is a kind of psammophyte which grows on sandy beaches.

var. typicum, HONDA, in Tokyo Bot. Mag. XLI. p. 377 (1927), et Monogr. Poac. Jap. Bamb. excl. p. 352 (1930; MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1353 (1931)

Nom. Jap. *Tukusi-kekamonohasi*

Leg. Ipse, 1927.

Distr. Kyûsyû.

Note. A psammophyte; endemic to southern Kyûsyû and Yakusima.

Ischaemum crassipes, THELLUNG., in Fedde Rep. Sp. Nov. X. p. 239 (1912; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 353 (1930)

Syn. *Andropogon crassipes*, STEUD., Syn. Glum. I. p. 375 (1855)

Ischaemum Sieboldii, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 291 (1866; FR. et SAV., Enum. Pl. Jap. II. p. 193 (1876; HACK., in DC. Monogr. Phan. VI. p. 217 (1889), et in Bull. Herb. Boiss. VII. p. 641 (1899), et 2 sér. III. p. 501 (1903); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 366 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 61 (1905) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 526 (1906); NAK., Fl. Kor. II. p. 342 (1911) partim.; MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929)

Ischaemum crassipes, (non THELLUNG NAK., in Cat. Sem. et Sp. Hort. Bot. Univ. Imp. Tokyo p. 4 (1914), p. 3 (1916, p. 4 (1918, et in Tokyo Bot. Mag. XXXIII. p. 1 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1353 (1931)

var. typicum, NAK., in Tokyo Bot. Mag. XXXIII. p. 1 (1919)

Nom. Jap. *Kamonohasi*

Leg. Ipse, Aug. 5, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea.

Note. Grows as psammophyte on sandy or rocky beaches.

var. aristatum, NAK., ex HONDA in Tokyo Bot. Mag. XXXVII. p. (121) (1923), et Monogr. Poac. Jap. Bamb. excl. p. 354 (1930; MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1353 (1931)

Syn. *Ischaemum Sieboldii*, (non MIQ.) MATSUM., Ind. Pl. Jap. II. 1. p. 61 (1905) p.p.; MATSUM. et HAY., Enum. Pl. Formos. p. 526 (1906) p.p.

Ischaemum crassipes, var. *Hondae*, NAK., in Tokyo Bot. Mag. XXXIII. p. 2 (1919)

Nom. Jap. *Noge-kamonohasi*

Leg. Ipse, Aug. 6, 1924.

Distr. Honsyû, Kyûsyû, Okinawa, Taiwan, Korea.

Note. The variety is found as psammophyte in littoral regions, and as far as my present knowledge extends it is restricted to the above cited regions.

var. *formosanum*, NAK., in Tokyo Bot. Mag. XXXIII. p. 2 (1919¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 355 1930¹; MAK. et NEM., Fl. Jap. ed. 2. p. 1353 (1931)

Syn. *Ischaemum Sieboldii*, var. *formosanum*, HACK., in Bull. Herb. Boiss. 2 sér. IV. p. 527 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 62 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 527 (1906); HAY., Ic. Pl. Formos. VII. p. 78 (1918)

Nom. Jap. *Taiwan-kamonohasi*

Leg. Ipse, 1928.

Distr. Taiwan.

Note. The variety is a psammophyte and is restricted to Formosa and to this island.

Rottboellia, (non SCOPOLI) LINN. f., Nov. Gram.

Gen. p. 22 (1779); KUNTH, Enum. Pl. I. p. 466 (1833); ENDL., Gen. Pl. n. 927 1836-40; STEUD., Syn. Glum. I. p. 360 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1129 1883; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 25 (1887) p., et in DC. Monogr. Phan. p. 278 (1889)

Syn. *Manisuria*, LINN., Mant. Pl. II. p. 164 (1771¹); O. KUNTZE, Rev. Gen. Pl. II. p. 779 (1891)

Stegosia, LOUR., Fl. Cochinch. I. p. 51 (1790)

Hemarthria, R. BR., Prodr. p. 207 (1810); KUNTH, Enum. Pl. I. p. 464 1833; STEUD., Syn. Glum. I. p. 353 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1131 (1883)

Rottboellia compressa, LINN. f., Supp. Pl. p. 114 (1781¹); ROXB., Fl. Ind. I. p. 354 1832; HACK., in DC. Monogr. Phan. VI. p. 286, (1889¹), et in Bull. Herb. Boiss. VII. p. 723 (1899); HOOK. f., Fl. Brit. Ind. VII. p. 153 (1897); KOM., Fl. Mansh. I. p. 247 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 81 (1905); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 321 (1912); MERR., Enum. Hainan Pl. p. 26 (1927¹); HITCHCOCK, in Lingn. Sc. Journ. VII. p. 239 (1927¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 45 1929; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 369 (1930)

Syn. *Hemarthria compressa*, R. BR., Prodr. p. 207 (1810¹); KUNTH, Enum. Pl. I. p. 465 (1833); STEUD., Syn. Glum. I. p. 358 (1855); MIQ., Fl. Ind. Bat. III. p. 406 (1855¹), et in Ann. Mus. Bot. Lugd. Bat. II. p. 287 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 186 (1876)

Rottboellia compressa, var. *genuina*, HACK., in DC. Monogr. Phan. VI. p. 286 (1889¹); HOOK. f., Fl. Brit. Ind. VII. p. 153 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 361 (1904); MATSUM. et HAY., Enum. Pl. Formos. p. 524 (1906); HAY., Ic. Pl. Formos. VII. p. 79 (1918); MAK. et NEM., Fl. Jap. ed. 2. p. 1391 (1931)

Manisuris compressa, O. KUNTZE, Rev. Gen. Pl. II. p. 779 (1891)

Nom. Jap. *Koba-no-usinosippei*

Leg. Ipse, Jul. 18, 1928.

Distr. Kyûsyû, Taiwan, China, India.

Note. Occurs in the low lands and on wet but sunny ground.

Imperata, CYRILLO, Pl. Rar. Neap. II. p. 26 t. 11

(1792); KUNTH, Enum. Pl. I. p. 477 (1833¹); ENDL., Gen. Pl. n. 940 (1836-40);

STEUD., Syn. Glum. I. p. 405 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1125 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 23 (1887), et in DC. Monogr. Phan. VI. p. 91 (1889); LEMÉE, Dict. Gen. Pl. Phan. III. p. 748 (1931)

Imperata cylindrica, BEAUVOIS, Ess. Agrost. p. 165 (1812); MERR., Enum. Hainan Pl. p. 24 (1927)

Syn. Lagurus cylindricus, LINN., Sp. Pl. ed. 1. p. 120 (1753), et Syst. Veg. ed. 10. p. 878 (1759)

Saccharum cylindricum, LAM., Encycl. I. p. 594 (1783)

Imperata arundinacea, CYRILLO, Pl. Rar. Neap. II. p. 26, t. 11. (1792); KUNTH, Enum. Pl. I. p. 477 (1833); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 23 (1887), et in DC. Monogr. Phan. VI. p. 92 (1889)

var. *Koenigii*, DURAND et SCHIZ., ex A. CAMUS. in Rev. Bot. Agric. Colon. V. 42. p. 110 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 43 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 375 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1351 (1931)

Syn. Saccharum spicatum, (non LINN.) THUNB., Fl. Jap. p. 42 (1784)

Saccharum Koenigii, RETZIUS, Obs. V. p. 16 (1789)

Imperata Koenigii, BEAUV., Ess. Agrost. p. 165 (1812); ROEM. et SCHULT., Syst. Veg. II. p. 289 (1817)

Imperata arundinacea, var. *Koenigii*, subvar. *glabrescens*, BUSE, in Pl. Jungh. III. p. 366 (1854); HACK., in DC. Monogr. Phan. VI. p. 95 (1889), et in Bull. Herb. Boiss. 2 sér. VII. p. 501 (1903); NAK., Fl. Kor. II. p. 338 (1911)

Imperata arundinacea, var. *Koenigii*, BENTH., Fl. Hongk. p. 419 (1861); HACK., in Engl. Bot. Jahrb. VI. p. 50 (1885), in DC. Monogr. Phan. VI. p. 94 (1889), in Bull. Herb. Boiss. VII. p. 639 (1899), et 2 sér. IV. p. 526 (1904); RENDL., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 346 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 59 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 517 (1906); NAK., Fl. Kor. II. p. 338 (1911); HAY., Ic. Pl. Formos. VII. p. 63 (1918)

Imperata cylindrica, var. *Koenigii*, BENTH. apud MERR. in Philipp. Journ. Sc. I. Supp. p. 322 (1906), et Enum. Philipp. Pl. I. p. 30 (1922)

Imperata cylindrica, var. *Koenigii*, (non DURAND et SCHINZ) HONDA, in Tokyo Bot. Mag. XXXIX. p. 39 et (173) (1925)

Nom. Jap. Tigaya

Leg. Ipse, Miyanoura

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines.

Note. One of the pioneers which invade the cultivated lands which is wasted at low altitudes.

Miscanthus, ANDERSSON, in Oefvers. Svensk.

Vet. Akad. Stockh. p. 165 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1125 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 23 (1887), et in DC. Monogr. Phan. VI. p. 101 (1889); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 495 (1932)

Syn. Eulalia, (non KUNTH), TRINIUS, in Mem. Acad. Petersb. VI. 2. p. 332 (1833) p.p.; MIQ., Fl. Ind. Bat. III. p. 517 (1855)

Miscanthus condensatus, HACK., in Bull. Herb. Boiss. VII. p. 639 (1899); MATSUM., Ind. Pl. Jap. II. 1. p. 64 (1905) p.p.; MAK., in Tokyo Bot. Mag. XXVII. p. (265) (1913); NAK., in Tokyo Bot. Mag. XXXI. p. 14 (1917) p.p.; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 379 (1930)

Syn. Miscanthus sinensis, var. *condensatus*, MAK., in Tokyo Bot. Mag. XXVII. p. 254

(1913); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929'; MAK. et NEM., Fl. Jap. ed. 2. p. 1361 (1931)

Nom. Jap. *Hatizyô-susuki*

Leg. Ipse, ca. Onoaida, Aug. 1928.

Distr. Honsyû, Kyûsyû, Okinawa, Bonins.

Note. It occurs in low lands as a member of the initial formation and sometimes makes a consocieties which stretches for over quite a considerable area.

Miscanthus sinensis, ANDERSSON, in Oefvers, Svensk. Vet. Akad. Forh. 1855 p. 166 (1856); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 23 (1887), et in DC. Monogr. Phan. VI. p. 105 (1889); HOOK., in Curtis Bot. Mag. t. 7304 1893; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 348 (1904; MATSUM., Ind. Pl. Jap. II. 1. p. 65 (1905; MATSUM. et HAY., Enum. Pl. Formos. p. 518 (1906; NAK., Fl. Kor. II. p. 339 (1911); YABE, Enum. Pl. Manch. p. 15 (1912; DUNN et TUTCH., Fl. Kwang. & Hongk. p. 319 (1912'; HAY., Ic. Pl. Formos. VII. p. 69 1918; MIURA, Fl. Manch. & Mong. p. 29 1925; MERR., Enum. Hainan Pl. p. 24 (1927; HITCHCOCK, in Lingn. Sc. Journ. VII. p. 230 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929); HONDA, Monogr. Poac. Jap. Bamb. excl. p. 332 1930; MAK. et NEM., Fl. Jap. ed. 2. p. 1361 (1931; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 105 1931,

Syn. *Saccharum polydactylon*, var. β THUNB., Fl. Jap. p. 43 1784

Saccharum japonicum, THUNB., in Trans. Linn. Soc. II. p. 328 1794

Erianthus japonicus, BEAUV., Ess. Agrost. p. 14 1812; ROEM. et SCHULT., Syst. Veg. II. p. 324 1817; NEES, in HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 242 1836-40,

Eulalia japonica, TRINIUS, in Mem. Acad. Petersb. sér. 6. II. p. 333 1833; MIQ., Fl. Ind. Bat. III. p. 518 1855; STEUD., Syn. Glum. I. p. 412 1865; FR. et SAV., Enum. Pl. Jap. II. p. 189 1876

Miscanthus japonicus, non ANDERSSON PILG., in Perk. Frag. Fl. Philipp. p. 137 1904

Nom. Jap. *Susuki*

Leg. Ipse, Aug. 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. Occurs in waste lands.

var. **purpurascens**, RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 348 1904; MASAMUNE, Prel. Rep. Veg. Yak. p. 44 1929; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 385 1930; MAK. et NEM., Fl. Jap. ed. 2. p. 1361 1931'

Syn. *Miscanthus purpurascens*, ANDERSSON, in Oefvers. Svensk. Vet. Akad. Forh. 1855 p. 167 1856; HACK., in DC. Monogr. Phan. VI. p. 106 1889. et in Bull. Herb. Boiss. VII. p. 639 1899; PALIB., Consp. Fl. Kor. III. p. 129 1901; KOM., Fl. Mansh. I. p. 244 (1901' p.p.; MATSUM., Ind. Pl. Jap. II. 1. p. 65 (1905; NAK., Fl. Kor. II. p. 339 (1911'; TAKEDA, Fl. Shik. p. 494 1914; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 106 1931

Miscanthus sinensis, f. *purpurascens*, NAK., in Tokyo Bot. Mag. XXXI. p. 16 (1917)

Miscanthus sinensis, var. *purpurascens*, HOOK. f.; MAK. et NEM., Fl. Jap. ed. 1. p. 1464 (1925)

Nom. Jap. *Murasaki-susuki*

Leg. Ipse, Aug. 23, 1928.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Note. The variety is found in the Pseudosasa Owatarii Association. It is found in lands further north than those where the type species can be found, but nearly always in the same localities.

Microstegium, NEES, in LINDL. Nat. Syst. ed. 2.

p. 447 (1836 ; STEUD., Syn. Glum. I. p. 411 (1855) ; LEMÉE, Dict. Gen. Pl. Phan. IV. p. 467 (1932)

Syn. *Pollinia*, (non SPRENG.) TRINIUS, in Mem. Ac. Petersb. sér. 6. II. p. 304 (1833) ; STEUD., Syn. Glum. I. p. 409 (1855 ; BENTH. et HOOK. f., Gen. Pl. III. p. 1127 (1883) p.p. ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 24 (1887) p.p., et in DC. Monogr. Phan. VI. p. 151 (1889) p.p.

Leptatherum, NEES, in Proc. Linn. Soc. I. p. 92 (1841), et in STEUD., Nom. Bot. ed. 2. II. p. 29 (1841)

Pollinia, Sect. *Leptatherum*, BENTH. et HOOK. f., Gen. Pl. III. p. 1127 (1883 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 24 (1887)

Pollinia, subgen. *Leptatherum*, HACK., in DC. Monogr. Phan. VI. p. 170 (1889)

Microstegium nudum, A. CAMUS, in Ann. Soc. Linn. Lyon. t. LXVIII. p. 201 (1921 ; HONDA, Monogr. Poac. Jap. Bamb. excl. p. 405 (1930 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 44 (1929 ; MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 108 (1931

Syn. *Pollinia nuda*, TRINIUS, in Mem. Ac. Petersb. sér. 6 II. p. 307 (1833) ; STEUD., Syn. Glum. I. p. 410 (1855 ; HACK., in DC. Monogr. Phan. VI. p. 178 (1889 ; HOOK. f., Fl. Brit. Ind. VII. p. 117 (1897) ; MATSUM., in Tokyo Bot. Mag. IX. p. (427) (1895), et Ind. Pl. Jap. II. 1. p. 80 (1905 ; RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 356 (1904) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1338 (1931)

Leptatherum Royleanum, NEES, in Proc. Linn. Soc. I. p. 92 (1841

Pollinia japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 290 (1866

Leptatherum japonicum, FR. et SAV., Enum. Pl. Jap. II. pp. 190 et 603 (1876)

Eulalia nuda, O. KUNTZE, Rev. Gen. Pl. II. p. 775 (1891

Microstegium japonicum, KOIDZ., in Tokyo Bot. Mag. XLIII. p. 394 (1929)

Nom. Jap. *Sasa-gaya*

Leg. Ipse, Kosugidani, Sept. 30, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, China.

Note. Occurs in the lauri-aciculisilvae ; distributes in the temperate regions of Asia and southern Africa.

Pogonatherum, BEAUV., Ess. Agrost. p. 56 t. 11.

f. 7 (1812 ; KUNTH, Enum. Pl. I. p. 477 (1833 ; ENDL., Gen. Pl. n. 941 (1836-40) ; STEUDL., Syn. Glum. I. p. 412 (1855) ; BENTH. et HOOK. f., Gen. Pl. III. p. 1127 (1883 ; HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 24 (1887), et in DC. Monogr. Phan. VI. p. 190 (1889)

Syn. *Homoplitis*, TRINIUS, Fund. Agrost. p. 166 (1820)

Pogonopsis, J. PRESL, in C. B. PRESL, Rel. Haenk. I. p. 333 t. 46 (1830)

Pogonatherum crinitum, TRIN., Fund. p. 166 (1820) ; KUNTH, Enum. Pl. I. p. 478 (1833) ; MIQ., Fl. Ind. Bat. III. p. 516 (1855, et in Ann. Mus. Bot. Lugd. Bat. II. p. 289 (1866) ; FR. et SAV., Enum. Pl. Jap. II. p. 189 (1876) ; HOOK. f., Fl. Brit. Ind. VII. p. 141 (1897) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 45 (1929) ; HONDA,

Monogr. Poac. Jap. Bamb. excl. p. 414 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1386 (1931)

Syn. *Andropogon crinitum*, THUNB., Fl. Jap. p. 40, t. 7 (1784)

Pogonatherum saccharoideum, BEAUV., Ess. Agrost. p. 176, t. 11. f. 7 (1812); STEUD., Syn. Glum. I. p. 412 (1855); HACK., in DC. Monogr. Phan. VI. p. 192 (1889); HOOK. f., Fl. Brit. Ind. VII. p. 141 (1897); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 357 (1904); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 320 (1912)

Pogonatherum polystachyum, ROEM. et SCHULT., Syst. Veg. II. p. 497 (1817)

Homoplitis crinita, TRINIUS, Fund. Agrost. p. 165 (1820)

Pollinia polystachys, SPRENG., Syst. Veg. I. p. 283 (1825)

Pogonatherum saccharoideum, α *genuinum*, HACK., in DC. Monogr. Phan. VI. p. 193 (1889)

Pogonatherum saccharoideum, β *monandrum*, HACK., in DC. Monogr. Phan. VI. p. 193 (1889), in Bull. Herb. Boiss. VII. p. 641 (1899), et 2 sér. IV. p. 527 (1904); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 357 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 79 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 522 (1906); HAY., Ic. Pl. Formos. VII. p. 79 (1918)

Pogonatherum paniceum, HACK., in Allg. Bot. Zietschr. XII. p. 178 (1905); MERR., Enum. Philipp. Pl. I. p. 35 (1922)

Nom. Jap. *Itati-gaya*

Lcy. Ipse, Nagata, Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, China, Philippines.

Note. Common species in South Japan. Occurs on vertical walls and on surfaces artificially produced by cutting, or on dry ground.

Coix, [LINN., Gen. ed. 1. p. 280 (1737) Sp. Pl. ed. 1. p. 972 (1753), et Gen. Pl. ed. 5. p. 419 (1754); KUNTH, Enum. Pl. I. p. 20 (1833); ENDL., Gen. Pl. n. 743 (1836-40); STEUD., Syn. Glum. I. p. 9 (1855); BENTH. et HOOK. f., Gen. Pl. III. p. 1112 (1883); HACK., in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 21 (1887); LEMÉE, Dic. Gen. Pl. Phan. II. p. 246 (1930)

Coix lachryma-Jobi, LINN., Sp. Pl. ed. 1. p. 972 (1753)

var. **susutama**, HONDA, in Monogr. Poac. Jap. Bamb. excl. p. 416 (1930)

Syn. *Coix Lacryma*, (non LINN.) THUNB., Fl. Jap. p. 37 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 273 (1856); FR. et SAV., Enum. Pl. II. p. 156 (1876)

Coix agrestis, LOUR., Fl. Cochinch. p. 551 (1790); MIQ., Fl. Ind. Bat. III. p. 476 (1855-59), et in Ann. Mus. Bot. Lugd. II. p. 273 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 157 (1876); HACKEL, in Bull. Herb. Boiss. VII. p. 638 (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 49 (1906); YABE, Enum. Pl. Manch. p. 13 (1912); MORI, Enum. Pl. Cor. p. 41 (1922)

Coix Lacryma, α *susutama*, SIEB., Syn. Pl. Oec. Jap. p. 10 (1830)

Coix Lacryma-Jobi, (non LINN.) HACKEL, in Bull. Herb. Boiss. VII. p. 638 (1899); RENDLE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 345 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 49 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 68 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 42 (1929); MERR., Enum. Hainan Pl. p. 24 (1927)

Coix Lacryma-Jobi, form. *susutama*, MAK., in Tokyo Bot. Mag. XX. p. 10 (1906); MAK. et NEM., Fl. Jap. ed. 2. p. 1334 (1931)

Coix Lacryma-Christi, NAK., Veg. Isl. Quel. p. 18 (1914)

Nom. Jap. *Zyuzudama*

Leg. Ipse, Miyanoura.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. Occurs on marshy ground or along rivers at low altitudes, and is common in the warmer parts of eastern Asia.

| Names of Plants | Regions | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|--------|-------|-------------------------|--|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien Northern Kuriles & Kamchatka Manchuria, Amur & Ussuri China |
| <i>Pseudosasa japonica</i> , MAK. | | | | | | | + | + | + | + | | | |
| <i>Pseudosasa Owatarii</i> , MAK. | | | | | | | | | | | | | |
| <i>Pleioblastus Hindsii</i> , NAK. | | | | + | + | + | + | | | | | | |
| <i>Pleioblastus Masamuneanus</i> , MAK. | | | | | | | | | | | | | |
| <i>Agropyron semicostatum</i> , NEES | | | | + | + | + | + | + | + | + | + | + | |
| <i>Brachypodium miserum</i> , KOIDZ. | | | + | | | | | + | + | + | + | + | |
| <i>Festuca ovina</i> , LINN. | | | + | | | | | + | + | + | + | + | + |
| <i>Festuca pauciflora</i> , THUNB. | | | | | | + | + | + | + | + | + | | |
| <i>Poa acroleuca</i> , STEUD. | | | | + | | + | + | + | + | + | + | + | + |
| <i>P. a. var. spiciformis</i> , HONDA | | | | | | | + | | | + | | | |
| <i>Poa annua</i> , LINN. | + | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Briza minor</i> , LINN. | | | + | | + | | + | + | + | + | | | + |
| <i>Lophatherum gracile</i> , BRONG. <i>var. elatum</i> , BENTH. | | | + | + | + | | + | + | + | + | | | + |
| <i>Eragrostis atrovirens</i> , TRINIUS | | | + | + | + | | + | + | + | + | | | + |
| <i>Eragrostis pilosa</i> , BEAUV. | + | | | + | | | + | + | + | + | | | + |
| <i>Phragmites japonica</i> , STEUD. | | | | | | | | + | + | + | + | | |
| <i>Arundo donax</i> , LINN. | | | + | + | + | + | + | + | + | + | | | + |
| <i>Avena fatua</i> , LINN. | | | + | + | + | + | + | + | + | + | + | | + |
| <i>Deschampsia caespitosa</i> , BEAUV. | | | + | | | | + | + | + | + | + | + | |

| | | | | | | | | | | | | |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| <i>Deschampsia flexuosa</i> , TRINIUS | + | | | | | + | + | + | + | + | + | + |
| <i>D. f. form. pallida</i> , HACK. | | | | | | | | + | | | | |
| <i>Eleusine indica</i> , GAERTN. | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Cynodon dactylon</i> , PERSOON | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Calamagrostis hakonensis</i> , FR. & SAV. | | | | | | | + | + | + | + | + | |
| <i>Calamagrostis longiseta</i> , HACK. | | | | | | | + | | + | + | | |
| <i>Calamagrostis Masamunei</i> , HONDA | | | | | | | | | | | | |
| <i>Calamagrostis orthophylla</i> , HAY. et HONDA | | | | | | | + | + | + | | | |
| <i>Agrostis alba</i> , LINN. | + | | | | | | + | + | + | + | + | + |
| <i>Agrostis flaccida</i> , HACK. | | | | | | | + | + | + | + | + | |
| <i>Agrostis Matsumuræ</i> , HACK. | | + | | | | | + | + | + | + | + | |
| <i>Agrostis clavata</i> , TRIN. | + | + | | | | | + | + | + | + | + | + |
| <i>Sporobolus elongatus</i> , R. BR. | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Alopecurus geniculatus</i> , LINN. | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Alopecurus japonicus</i> , STEUD. | | | | | | | + | + | + | + | | + |
| <i>Anthoxanthum odoratum</i> , LINN. | | | | | | | + | + | + | + | | |
| <i>Pennisetum sordidum</i> , KOIDZ. | + | + | | + | | | + | | | | | |
| <i>Setaria lutescens</i> , HUBB. var. <i>genuina</i> , HONDA | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>S. l. var. longispica</i> , HONDA | | + | + | + | | | + | | + | + | | |
| <i>Setaria viridis</i> , BEAUV. var. <i>pachystachys</i> , subv. <i>typica</i> , MAK. et NEM. | + | + | + | + | + | + | + | + | + | + | | + |
| <i>S. v. var. purpurascens</i> , MAXIM. | | | | | | | + | + | + | + | | + |
| <i>Panicum bisulcatum</i> , THUNB. | + | + | | | | | + | | + | + | + | + |
| <i>Panicum repens</i> , LINN. | + | + | + | + | + | + | + | | | | | + |
| <i>Panicum plicatum</i> , LAM. | | + | + | + | + | + | + | | | | | + |
| <i>Sacciolepis spicata</i> , HONDA | + | + | + | + | | | + | + | + | + | | + |
| <i>Echinochloa crus-galli</i> , BEAUV. subsp. <i>hispidula</i> , HONDA | + | + | + | | | | + | + | + | + | + | |
| <i>Oplismenus Burmanni</i> , BEAUV. var. <i>intermedius</i> , HONDA | | + | | | | | | | | | | |
| <i>Oplismenus compositus</i> , BEAUV. | + | + | + | + | + | + | + | | | | | + |
| <i>Oplismenus japonicus</i> , HONDA | | + | + | + | + | + | + | + | + | + | | |
| <i>Oplismenus microphyllus</i> , HONDA | | | | | | | + | | + | | | |
| <i>Isachne globosa</i> , O. KUNTZE ¹ | + | + | + | + | | | + | + | + | + | + | + |
| <i>Isachne myosotis</i> , NEES, var. <i>minor</i> , HONDA | | + | | | | | | | | | | |
| <i>Paspalum scrobiculatum</i> , LINN. | + | + | + | + | | | + | + | + | | | + |

| Names of Plants | Regions | | | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|--------------|---------|------------|--------------|--------|--------|--------|-------|-------------------------|-----------|------------------------------|-------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Oshima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Usuri | China |
| <i>Paspalum Thunbergii</i> , KUNTH | | | | | + | + | + | + | + | + | + | + | + | | | | + |
| <i>Eriochloa villosa</i> , KUNTH | | | + | + | + | | | + | + | + | + | + | | | | + | + |
| <i>Syntherisma ischaemum</i> , NASH. | + | + | + | + | + | + | + | + | + | + | + | + | + | + | | + | + |
| <i>Syntherisma sanguinalis</i> , DULAC. var. <i>ciliaris</i> , HONDA | | + | + | + | + | + | + | + | + | + | + | + | + | | | + | |
| <i>Spinifex littoreus</i> , MERR. | + | | + | + | + | + | | | | | | | | | | | + |
| <i>Arundinella hirta</i> , TANAKA, var. <i>typica</i> , HONDA | | | | | | | | + | + | + | + | + | + | | | | |
| <i>Zoysia japonica</i> , STEUD. | | + | + | + | | | | + | + | + | + | + | + | | | + | + |
| <i>Zoysia macrostachys</i> , FR. et SAV. | | | | | + | + | + | + | + | + | + | + | + | | | | |
| <i>Zoysia tenuifolia</i> , TRINIUS | | + | + | + | + | | | + | + | + | | | | | | | |
| <i>Dimeria ornithopoda</i> , TRINIUS, var. <i>yakushimensis</i> , HONDA | | | | | | | | | | | | | | | | | |
| <i>Arthraxon hispidus</i> , MAK. var. <i>typicus</i> , HONDA | + | + | + | + | | | | + | + | + | + | + | + | | | + | |
| <i>Cymbopogon Goeringii</i> , HONDA var. <i>genuinus</i> , HONDA | + | + | + | + | + | | | + | + | + | + | + | + | | | + | + |
| <i>Andropogon micranthus</i> , KUNTH | + | + | + | + | + | + | + | + | + | + | + | + | + | | + | + | |
| <i>Ischaemum anthephroides</i> , MIQ. var. <i>eristachyum</i> , HONDA | | | | | + | + | + | + | + | + | + | + | + | | | + | |
| <i>I. a.</i> var. <i>typicum</i> , HONDA | | | | | | | | + | | | | | | | | | |
| <i>Ischaemum crassipes</i> , THELLUNG var. <i>typicum</i> , NAK. | | | + | + | + | | | + | + | + | + | | | | | | |
| <i>I. c.</i> var. <i>aristatum</i> , NAK. | | | + | + | | | | + | | | + | + | | | | | |
| <i>I. c.</i> var. <i>formosanum</i> , NAK. | | | + | | | | | | | | | | | | | | |
| <i>Rottboelia compressa</i> , LINN. f. | | | + | | | | | + | | | | | | | | | + |
| <i>Imperata cylindrica</i> , BEAUV. var. <i>Koenigii</i> , DURAND & SCHIZ. | + | + | + | + | + | + | + | + | + | + | + | + | | | | + | |
| <i>Miscanthus condensatus</i> , HACK. | | + | | + | | | | + | | | + | | | | | | |
| <i>Miscanthus sinensis</i> , ANDERSSON | + | + | + | + | + | + | + | + | + | + | + | + | + | | + | + | |
| <i>M. s.</i> var. <i>purpurascens</i> , RENDL. | | | | | | | | + | + | + | + | + | + | + | + | + | |
| <i>Microstegium nudum</i> , A. CAMUS | | | | + | + | | | + | + | + | + | + | + | | | + | |

| | | | | | | | | | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|------------------------|----|----|----|---|----|----|---|---|---|
| Pogonatherum crinitum, KUNTH | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Coix lachryma-Jobi, LINN. var. susutama, HONDA | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Total | 78 | 18 | 13 | 47 | 44 | 39 | 29 | 69 | 55 | 63 | 45 | 35 | 12 | 7 | 17 | 42 | | | |
| Percentage | | 23 | 17 | 60 | 56 | 50 | 37 | 88 | 71 | 81 | 58 | 44 | 15 | 9 | 22 | 54 | | | |
| (Southern elements 58) | | | | | | | | | | (Northern elements 71) | | | | | | | | | |

Studying the table, it appears that even though in the island there are some elements which are thought to have originated in southern districts, like *Spinifex*, most of the elements of this family indigenous to this island are considered as elements of the northern districts. From these facts I reached the conclusion that the island is more closely related to the northern than to the southern lands. Thus in the case of this family the sea that divides Amami-Ōshima and Yakusima is significant as a line of demarkation of the Flora of Japan.

Cyperaceae

Cyperaceae, J. ST.-HIL., Expos. Famil. I. p. 62, t. 12 1835

Syn. Cyperoidae, JUSS., Gen. p. 26 1789

Lipocarpna, R. BR., in Tuckey, Congo, p. 459

1818 ; KUNTH, Enum. Pl. II. p. 265 1837 ; ENDL., Gen. Pl. n. 987 1836-40 ;

BENTH. et HOOK. f., Gen. Pl. III. p. 1054 1883 ; PAX, in ENGL. u. PRANT. Nat.

Pfl.-fam. II. ii. p. 106 1887 ; LEMÉE, Dict. Gen. Pl. Phan. IV. p. 117 1932

Syn. Hypaelytum, VAHL, Enum. II. p. 283 1836

Lipocarpa microcephala, KUNTH, Enum. Pl. II. p. 268 1837 ; MIQ., Fl. Ind. Bat. III.

p. 331 (1856 , et in Ann. Mus. Bot. Lugd. Bat. II. p. 147 1855 ; BENTH., Fl.

Hongk. p. 388 (1851) ; BOECK., in Linnaea XXXVII. p. 118 1871 ; FR. et SAV.,

Enum. Pl. Jap. II. p. 120 (1876 ; FR., in Mém. Soc. Sc. Nat. Cherb. XXIV. p.

264 (1884) ; C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 668 1893 ; DIELS,

Fl. Cent. Chin. p. 227 (1900) ; MATSUM., Ind. Pl. Jap. II. 1. p. 155 (1905 ; NAK., Fl.

Kor. II. p. 284 (1911) ; RIDLEY, Fl. Malay, II. p. 108 (1923) ; MERR., Enum. Philipp.

Pl. I. p. 102 (1922) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929 ; YAMAZUTA,

List Manch. Pl. p. 49 (1930) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1478 1931

Syn. Hypaelyptum microcephalum, R. BR., Prodr. p. 220 (1810)

Ascolepis kyllingoides, STEUDEL, in ZOLL. Verz. Pfl. Ind. Arch. II. p. 61 1854

Scirpus leptocarpus, F. MUELL., in Trans. Phil. Soc. Vict. I. p. 109 1855

Kyllinga squarrosa, STEUDEL, Syn. Pl. Glum. II. p. 68 (1835)

Isolepis squarrosa, non ROEM. et SCHULT.) MIQ., in Ann. Mus. Bot. Lugd.

Bat. II. p. 211 (1865¹); OLIV., in Journ. Linn. Soc. IX. p. 170 (1837); FR. et SAV., Enum. Pl. Jap. II. p. 115 (1876¹)

Nom. Jap. *Hinzi-gayatsuri*

Lcg. Ipse, Aug. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Taiwan, Korea, Manchuria, China, Malay, Philippines.

Note. Occurs in cultivated, waste, or somewhat wet lands at low altitudes.

Cyperus, [MICH., ex LINN. Syst. ed. 1 (1735, Gen. Pl. ed. 1. p. 12 (1737),] et Sp. Pl. ed. 1. p. 44 (1753); KUNTH, Enum. Pl. II. p. 2 (1837); ENDL., Gen. Pl. n. 1003 (1836¹); BENTH. et HOOK. f., Gen. Pl. III. p. 1043 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 107 (1887); LEMÉE, Dict. Gen. Pl. Phan. II. p. 463 (1930)

Syn. *Chlorocyperus*, RIKLI, in Pringsheim, Jahrb. XXVII. p. 563 (1895)

Cyperus compressus, LINN., Sp. Pl. ed. 1. p. 46 (1753); KUNTH, Enum. Pl. II. p. 23 (1837); HOOK., in Journ. Bot. Kew. Misc. VI. p. 27 (1854¹); BOECK., in Linnaea, XXXV. p. 517 (1867-8); FR. et SAV., Enum. Pl. Jap. II. p. 105 (1876¹); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 605 (1894¹), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 210 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 140 (1905); MERR., Enum. Philipp. Pl. I. p. 103 (1922), et Enum. Hainan Pl. p. 37 (1927); RIDLEY, Fl. Malay V. p. 144 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); YAMAZUTA, List Manch. Pl. p. 46 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1463 (1931)

Syn. *Cyperus pectiniformis*, NEES, in Wight Contrib. p. 77 (1834); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 22 (1830)

Cyperus Meyenii, NEES, in Nov. Act. Acad. Nat. Cur. XIX. Supp. 1. p. 57 (1843)

Nom. Jap. *Kugugayaturi*

Leg. Ipse, Jul. 14, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Manchuria, China, Philippines.

Note. Occurs by the roadside, in waste lands at low altitudes; rather common in Japan.

Cyperus flavidus, RETZ., Obs. V. p. 13 (1785); ROXB., Fl. Ind. I. p. 200 (1832); C. B. CLARKE, in Journ. Linn. Soc. XXXIV. p. 23 (1838); MATSUM., Ind. Pl. Jap. II. 1. p. 140 (1905); NAK., Fl. Kor. II. p. 287 (1911); DUNN, Supp. List Chinese, Flow. Pl. p. 439 (1911); CAMUS, in LECOMTE Fl. Ind. Chin. VII. p. 50 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1463 (1931)

Syn. *Cyperus pseudohaspan*, MAK., in Tokyo Bot. Mag. VI. p. 47 (1832)

Nom. Jap. *Koazegayaturi*

Leg. Ipse, Jun. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China.

Note. Grows on wet place in the lowlands, especially in rice fields; common in the warmer parts of Japan.

Cyperus hakonensis, FR. et SAV., Enum. Pl. Jap. II. pp. 104, et 538 (1876¹); MAK., in Tokyo Bot. Mag. IV. p. 229 (1890); MATSUM., Ind. Pl. Jap. II. 1. p. 140 (1905¹); MAK. et NEM., Fl. Jap. ed. 2. p. 1464 (1931)

Nom. Jap. *Hinagayaturi*

Leg. Ipse, Jul. 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species is found in the lowlands among cultivated fields and is not yet reported in lands further south than Yakusima.

Cyperus haspan, LINN., Sp. Pl. ed. 1. p. 45 (1753); KUNTH, Enum. Pl. II. p. 34 (1837); MIQ., Fl. Ind. Bat. III. p. 267 (1856); BENTH., Fl. Hongk. p. 386 (1861), et Fl. Austral. VII. p. 270 (1878); BOECK., in Linn. XXXV. p. 574, var. α (1857-8); C. B. CLARKE, in Hook. f. Fl. Brit. Ind. VI. p. 600 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 213 (1903); DIELS, Fl. Cent. Chin. p. 227 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 141 (1905); CAMUS, in LECOMTE, Fl. Ind. Chin. VII. 1. p. 50 (1922); MERR., Enum. Philipp. Pl. I. p. 105 (1922), et Enum. Hainan Pl. p. 37 (1927); RIDLEY, Fl. Malay, V. p. 142 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1464 (1931)

Nom. Jap. *Mizuhanabi*

Leg. Ipse, Onoaida, Sept. 1, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. Grows in open sunny, but wet places at low altitudes; common in tropical and warmer regions.

Cyperus iria, LINN., Sp. Pl. ed. 1. p. 45 (1753); THUNB., Fl. Jap. p. 36 (1784); KUNTH, Enum. Pl. II. p. 38 (1837); NEES, in HOOK. et ARNOT Bot. Capt. Beech. Voy. p. 223 (1836-40); BENTH., Fl. Hongk. p. 385 (1861); BOECK., in Linn. XXXV. p. 595 (1857-8), et in Engl. Bot. Jahrb. VI. p. 51 (1885); FR., in Bull. Soc. Bot. Fr. XXIX. p. 12 (1882); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 606 (1894), in FORB. et HEMSL. Ind. Fl. Sin. III. p. 213 (1903), et Ill. Cyp. t. XIV. 1. p. 1909 (1909); MAK., in Tokyo Bot. Mag. VIII. p. 380 (1894); DIELS, Fl. Cent. Chin. p. 227 (1901); PALIBIN, Consp. Fl. Kor. III. p. 19 (1901); KOM., Fl. Mansh. I. p. 334 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 141 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 473 (1906); NAK., Fl. Kor. II. p. 288 (1911); CAMUS, in LECOMTE, Fl. Ind. Chin. VII. 1. p. 59 (1912); MERR., Enum. Philipp. Pl. I. p. 106 (1922), et Enum. Hainan Pl. p. 38 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1465 (1931)

Nom. Jap. *Kogomegayaturi*

Leg. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, India, Philippines.

Note. Occurs in wet ground near the sea level especially in cultivated fields; rather common throughout the warmer regions of the world.

Cyperus rotundus, LINN., Sp. Pl. ed. 1. p. 45 (1753), et Syst. Veg. p. 96 (1784); THUNB., Fl. Jap. p. 36 (1784); LOUR., Fl. Cochinch. ed. WILLD. p. 53 (1793); KUNTH, Enum. Pl. II. p. 58 (1837) p.p.; BOECK., in Linn. XXXVI. p. 283 (1859-70); BENTH., Fl. Hongk. p. 387 (1861); FR., in Mém. Soc. Sc. Nat. Cherb. XXIV. p. 262 (1884); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 614 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 216 (1903); DIELS, Fl. Cent. China, p. 227 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 143 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 475 (1906); CAMUS, in LECOMTE, Fl. Ind. Chin. VII. 1. p. 69 (1912); MERR., Enum. Philipp. Pl. I. p. 107 (1922), et Enum. Hainan Pl. p. 38 (1927); RIDLEY, Fl. Malay

V. p. 145 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); YAMAZUTA, List Manch. Pl. p. 47 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1467 (1931)
Syn. *Cyperus hexastachyus*, ROTTB., Descr. et Ic. p. 28, t. 14, f. 2 (1773); HOOK. et ARNOT., Bot. Capt. Beech. Voy. p. 272 (1836-40)

Nom. Jap. *Hamazuge*

Leg. Ipse, Aug. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, India.

Note. Grows in littoral regions on sandy soil; is distributed all over the tropical and temperate regions of both hemispheres.

Cyperus truncatus, TURCZ., in Bull. Soc. Mosc. p. 103 (1833., et Fl. Dahur. II. 1. p. 245 (1856)

var. *orthostachya*, C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 218 (1903 ; MATSUM., Ind. Pl. Jap. II. 1. p. 143 (1905)

Syn. *Cyperus orthostachyus*, FR. et SAV., Enum. Pl. Jap. II. pp. 106, et 539 (1876

Cyperus truncatus, (non TURCZ.) KOM., Fl. Mansh. I. p. 329 1901 p.p.; MORI. Enum. Pl. Cor. p. 71 (1922)

Cyperus truncatus, TURCZ. var. *robustus*, NAK., in Tokyo Bot. Mag. XL. p. 146 (1926); MAK. et NEM., Fl. Jap. ed. 2. p. 1468 (1931); MIY. et KUDO Fl. Hokk. & Sagh. II. p. 196 (1930)

Nom. Jap. *Usikugu*

Leg. Ipse, Sept. 6, 1926.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. Occurs in open grassland at low altitudes and on somewhat wet ground.

Pycneus, BEAUV., Fl. d'Oware et Benin II. p. 48,

t. 83 (1807)

Syn. *Picreus*, JUSS., in Dict. Sc. Nat. XL. pl. 194 (1826)

Cyperus, Sect. *Pycneus*, (*Picreus*) GRISEB., Spicil. Fl. Rumel. II. p. 419 (1844

Pycneus globosus, REICHB., Fl. Excurs. Addend. p. 140 (1830-32); C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 203 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 157 (1912; NAK., in Bull. Biogeogr. Soc. Jap. I. p. 254 (1930)

Syn. *Cyperus strictus*, ROXB., Fl. Ind. I. p. 146 (1820; KUNTH, Enum. Pl. II. p. 12 (1837)

Cyperus Linneanus, NEES, in Linnaea, IX. p. 283 (1834)

Cyperus tortuosus, KOENIG, in ROXB. Fl. Ind. I. p. 201 (1832); KUNTH, Enum. Pl. II. p. 16 (1837)

Cyperus globosus, ALL. var. *stricta*, C. B. CLARKE, in Journ. Linn. Soc. XXI. p. 47 (1884; MAK. et NEM., Fl. Jap. ed. 2. p. 1464 (1931)

Nom. Jap. *Azegayaturi*

Leg. Serizawa! 1931.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China, India, Philippines.

Note. Grows on open and damp grassland at low altitudes; rather common in the tropics, subtropics, and warmer regions of the old world.

Pycneus odoratus, URB., Symb. Austil. II. p. 164 (1930; MERR., Enum. Philipp. Pl. I. p. 110 (1922), et Enum. Hainan Pl. p. 38 (1927)

Syn. *Cyperus odoratus*, LINN., Sp. Pl. ed. 1. p. 46 (1753)

Pycnus polystachyus, BEAUV., Pl. d'Oware et Benin. II. p. 48, t. 83 f. 2 (1807 ; NEES, in Nov. Act. Acad. Nat. Cur. XIX. Suppl. p. 55 (1843) ; C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 592 (1834), et in FORB. et HEMS. Ind. Fl. Sin. III. p. 205 (1903) ; MATSUM., Ind. Pl. Jap. II. 1. p. 158 (1905) ; CAMUS, in LECOMT. Fl. Ind. Chin. VII. 1. p. 34 (1912 ; MORI, Enum. Pl. Cor. p. 75 (1922) ; RIDLEY, Fl. Malay V. p. 139 (1925) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929)

Cyperus polystachyus, (non ROTTB.) R. BR., Prodr. p. 214 (1810) ; KUNTH, Enum. Pl. II. p. 13 (1837) ; HOOK. et ARN., Bot. Capt. Beech. Voy. p. 220 (1836-40 ; MIQ., Fl. Ind. Bat. III. p. 258 (1856) ; BENTH., Fl. Hongk. p. 385 (1861 ; BOECK., in Linn. XXXV. p. 477 (1867-8 ; FR., in Mém. Soc. Nat. Cherb. XXIV. p. 262 (1884 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1466 (1931)

Cyperus bruneus, non SWARTZ HOOK. et ARN., Bot. Capt. Beech. Voy. p. 99 (1841

Nom. Jap. *Iga-gayaturi*

Leg. Ipse, Miyanoura, Sept. 1, 1931

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, India, Malay.

Note. Occurs on wet ground near rice-fields at low altitudes ; common in tropical or warmer countries.

Mariscus, HALL., Enum. Stirp. Helver. I. p. 251 1742 ; KUNTH, Enum. Pl. II. p. 115 1847 ; O. KUNTZE, Rev. Gen. Pl. II. p. 754 1891 ; LEMÉE, Dict. Pl. Phan. IV. p. 314 1932

Syn. *Cyperus*, Sect. *Mariscus*, ENDL., Gen. Pl. p. 119 1836
Opethola, GAERTN., Fruct. I. p. 14, t. 2 1788

Mariscus sieberianus, NEES, in Linnaea, IX. p. 286 1834 ; C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 622 1894 , FORB. et HEMS., Ind. Fl. Sin. III. p. 221 1903 , et Ill. Cyp. t. XXIII. 7 1909 ; MATSUM., Ind. Pl. Jap. II. 1. p. 156 1905 ; MATSUM. et HAY., Enum. Pl. Formos. p. 477 1906 ; MORI, Enum. Pl. Cor. p. 75 (1922 ; MERR., Enum. Philipp. Pl. I. p. 114 (1922 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 49 1929

Syn. *Mariscus cyperinus*, non VAHL.) PRESL, in Oken, Isis. XXI. p. 270 (1829 ; HOOK. et ARN., Bot. Capt. Beech. Voy. p. 270 (1836-40 p.p.

Cyperus umbellatus, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 142 (1865

Cyperus Sieberianus, DIELS, Fl. Cent. China p. 227 (1900

Mariscus Sieberianus, NEES, var. *subcomposita*, CLARKE ; MAK. et NEM., Fl. Jap. ed. 2. p. 1478 (1931

Nom. Jap. *Kugu*

Leg. Ipse, Sept. 7, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, China, Philippines.

Note. Occurs on waste ground at low altitudes ; is distributed in all tropical and subtropical lands.

Kyllingia, (*Kyllinga*) ROTTB., Descr. et Ic. Pl. p. 12, t. 4 (1773) ; ENDL., Gen. Pl. n. 1003b. (1836-40) ; KUNTH, Enum. Pl. II. p. 127 (1837) ; BENTH. et HOOK. f., Gen. Pl. III. p. 1045 (1883) ; PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 109 (1887) ; LEMÉE, Dict. Gen. Pl. Phan. III. p. 900 (1931)

Syn. *Kyllingia*, LINN. f., Suppl. p. 11 (1781)

Killingia, JUSS., Gen. Pl. p. 27 (1789)

Kyllingia brevifolia, ROTTB., Descr. et Ic. p. 13, t. 4 f. 3 (1773); KUNTH, Enum. Pl. II. p. 130 (1837); BOECK., in Linnaea, XXXV. p. 424 (1857-8); C. B. CLARKE, in HOOK. f., Fl. Brit. Ind. VI. p. 583 (1893), in FORB. et HEMSL. Ind. Fl. Sin. III. p. 223 (1903), et III. Cyp. t. I. (1903); DIELS, Fl. Cent. China p. 228 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 154 (1905); NAK., Fl. Kor. II. p. 289 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 254 (1930); YABE, Enum. Pl. Manch. p. 20 (1912); CAMUS, in LECOMTE, Fl. Ind. Chin. VII. 1. p. 24 (1912); MERR., Enum. Philipp. Pl. I. p. 114 (1922), et Enum. Hainan Pl. p. 38 (1927); RIDLEY, Fl. Malay V. p. 139 (1925); HULT., Fl. Kamtch. I. p. 157 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1477 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 197 (1931)

Syn. *Kyllingia monocephala*, (non LINN.) THUNB., Fl. Jap. p. 35 (1784); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 142 (1855); KOM., Fl. Mansh. I. p. 335 (1901)

Kyllingia gracilis, KUNTH, Enum. Pl. II. p. 134 (1837)

Kyllingia longiculis, MIQ., Fl. Ind. Bat. III. p. 292 (1855)

Kyllingia gracillima, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 142 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 103 (1876)

Kyllingia monocephala, LINN. var. *leiolepis*, FR. et SAV., Enum. Pl. Jap. II. p. 103 (1876)

Nom. Jap. *Himekugu*

Leg. Ipse, Kosugidani, Sept. 4, 1926.

Dist. Kamtchatka, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China, Philippines.

Note. Occurs in waste lands and on somewhat open places; widely distributed in eastern Asia and the Malayan regions.

Scirpus, [TOURN., ex LINN. Syst. I. 1753, Gen.

Pl. ed. 1. p. 12 (1737)] et Sp. Pl. ed. 1. p. 47 (1753); ENDL., Gen. Pl. n. 1000 (1836-40); KUNTH, Enum. Pl. II. p. 157 (1837); BENTH. et HOOK. f., Gen. Pl. III. p. 1049 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 111 (1897)

Scirpus erectus, POIR., Encycl. VI. p. 761 (1804); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 656 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 248 (1903); DIELS, Fl. Cent. China p. 228 (1900); KOM., Fl. Mansh. I. p. 344 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 161 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 488 (1906); NAK., Fl. Kor. II. p. 292 (1911); CAMUS, in LECOMTE, Fl. Ind. Chin. VII. 2. p. 136 (1912); MERR., Enum. Philipp. Pl. I. p. 117 (1922); RIDLEY, Fl. Malay V. p. 161 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 292 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1483 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 203 (1931)

Syn. *Scirpus debilis*, PURSH., Fl. Amer. Sept. I. p. 55 (1814); KUNTH, Enum. Pl. II. p. 159 (1837); BENTH., Fl. Austral. VII. p. 332 (1878)

Scirpus juncoides, ROXB., Hort. Beng. p. 81 (1814), et Fl. Ind. I. p. 216 (1820); KUNTH, Enum. Pl. II. p. 160 (1837); BENTH., Fl. Hongk. p. 395 (1861)

Scirpus luzonensis, PRESL, Rel. Haenk. I. p. 193 (1828); NEES, in Nov. Act. Nat. Cur. XIX. Suppl. I. p. 93 (1843)

Nom. Jap. *Hotarui*

Leg. Ipse, Nakama, Mart. 23, 1923.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, India, Madagascar, North America, Tropical Africa.

Note. Occurs on wet ground scattered at low altitudes; is widely distributed in warmer parts of both hemispheres.

Scirpus ternatanus, REINW., ex MIQ. Fl. Ind. Bat. III. p. 307 (1855); C. B. CLARKE, in Journ. Linn. Soc. XXXIV. p. 83 (1889), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 254 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 164 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 490 (1906); MERR., Enum. Philipp. Pl. I. p. 118 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 1486 (1931)

Syn. *Scirpus chinensis*, MUNRO, in SEEM. Bot. Voy. Herald p. 423 (1857); BENTH., Fl. Hongk. p. 395 (1861); DIELS, Fl. Cent. China, p. 228 (1900); NAK., in Biogeogr. Soc. Jap. I. p. 255 (1930)

Nom. Jap. Ôaburagaya

Leg. Ipse, Jun. 27, 1928.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines, Indo-China, Celebes, Moluccas, Europe, South Africa, Australia.

Note. Occurs on wet ground such as river sides at low altitudes.

Eleocharis, *Heleocharis* R. BR., Prodr. p. 224

1810); KUNTH, Enum. Pl. II. p. 139 (1837); ENDL., Gen. Pl. n. 1033 c. (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1047 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 112 (1837); LEMÉE, Dict. Gen. Pl. Phan. III. p. 495 (1931)

Syn. *Trichophyllum*, EHRB., Beitr. IV. p. 147 (1789)

Heliocharis, LINDL., Syn. Brit. Fl. p. 281 (1829)

Chaetocyperus, NEES, in Linn. IX. p. 289 (1834)

Eleocharis acicularis, R. BR., Prodr. Nepal. p. 224 (1810), et ROEM. et SCHULT., Syst. Veg. II. p. 154 (1817); KUNTH, Enum. Pl. II. p. 141 (1837); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 628 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 225 (1903); KOM., Fl. Mansh. I. p. 350 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 144 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 480 (1906); MORI, Enum. Pl. Cor. p. 71 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1463 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 207 (1931)

Syn. *Scirpus acicularis*, LINN., Sp. Pl. ed. 1. p. 48 (1753); HULT., Fl. Kamtch. I. p. 164 (1927)

Chaetocyperus Limnocharis, NEES, in Hook. Journ. Bot. II. p. 397 (1840); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 272 (1836-40)

Chaetocyperus costulatus, NEES et MYEN, in Mov. Act. Nat. Cur. XIX. Supp. 1. p. 96 (1843)

Heleocharis acicularis, KOCH, Syn. Fl. Germ. ed. 2. p. 853 (1845); BOECK., in Linn. XXXVI. p. 431 (1869-70); DIELS, Fl. Cent. Chin. p. 288 (1900)

Elaeocharis acicularis, LEDEB., Fl. Ross. IV. p. 243 (1853); MAXIM., Prim. Fl. Amur. p. 298 (1859)

Elaeocharis chaetaria, (non ROEM. et SCHULT.) HANCE, in Journ. Bot. XVII. p. 112 (1878)

Nom. Jap. Matubai

Leg. Ipse, Yaegadake, ca. 1600 m.

Distr. Kamtschatka, Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species grows on marshy ground in the laurisilvae or in the lauri-aciculisilvae.

Eleocharis japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 142 (1865); KOM., Fl. Mansh. I. p. 351 (1901), et Fl. Pen. Kamtsch. I. p. 209 (1927); MATSUM., Ind. Pl. Jap. II. 1. p. 145 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 481 (1906); NAK., Fl. Kor. II. p. 297 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 1469 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 210 (1931)

Syn. *Heleocharis japonica*, BOECK., in Linn. XXXVI. p. 422 (1869-70)

Scirpus japonicus, FR. et SAV., Enum. Pl. Jap. II. p. 109 (1876); HULT., Fl. Kamtsch. I. p. 165 (1927)

Eleocharis afflata, var. *japonica*, CLARKE, ex LÉVELL in Bull. Acad. Ind. Geogr. Bot. p. 203 (1904)

Nom. Jap. *Hari-i*

Leg. Ipse, Jun. 23, 1928.

Distr. Kamtschatka, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, Amur.

Note. Occurs in marshy places in the laurisilvae or the lauri-aciculisilvae.

Eleocharis tetraquetra, NEES, in WIGHT, Bot. Ind. p. 113 (1834); KUNTH, Enum. Pl. II. p. 150 (1837); STEUD., Syn. Glum. p. 78 (1855); BOECK., in Linn. XXXVI. pp. 447, 448 (1869-70); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 630 (1894), in FORB. et HEMSL. Ind. Fl. Sin. III. p. 228 (1903), et Ill. Cyp. t. 37, ff. 17-21 (1909); PALIB., Consp. Fl. Kor. III. p. 19 (1901); KOM., Fl. Mansh. I. p. 351 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 146 (1905); NAK., Fl. Kor. II. p. 297 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 210 (1931)

Syn. *Heleocharis tetraquetra*, BOECK., in Linn. XXXVI. p. 448 (1869-70)

Scirpus Wichurai, (non BOECK.) FR. et SAV., Enum. Pl. Jap. II. p. 544 (1876)

Scirpus hakonensis, FR. et SAV., Enum. Pl. Jap. II. p. 110 (1876)

Scirpus Onoei, FR. et SAV., Enum. Pl. Jap. II. pp. 111 et 544 (1876)

Scirpus petasatus, MAXIM., in Bull. Soc. Mosc. LIV. p. 64 (1879)

Heleocharis alta, BOECK., Cyp. Nov. I. p. 17 (1888)

Eleocharis tetraquetra, NEES, var. *Wichurai*, MAK., in Tokyo Bot. Mag. XIX. p. 16 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1470 (1931)

Nom. Jap. *Sikakui*

Leg. NAGAI! Kurio.

Distr. Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Himalaya, New South Wales.

Note. Occurs along rivers at low altitudes.

Fimbristylis, VAHL., Enum. II. p. 285 (1806); KUNTH, Enum. Pl. II. p. 220 (1837); ENDL., Gen. Pl. n. 998 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 1048 (1883); PAX, in ENGL. u. PRANT. Nat. Pf.-fam. II. ii. p. 113 (1887); LEMÉE, Dict. Gen. Pl. Phan. III. p. 122 (1931)

Syn. *Pseudocyperus*, STEUD., in Flora XXXIII. p. 229 (1850)

Iriha, O. KUNTZE, Rev. Gen. Pl. II. p. 751 (1891)

Fimbristylis annua, ROEM. et SCHULT., Syst. 2. p. 95 (1817); MERR., Enum. Philipp.

Pl. I. p. 121 (1922), et Enum. Hainan Pl. p. 39 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1472 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 211 (1931)

Syn. *Scirpus annuus*, ALL., Fl. Pedem. II. p. 277 (1785)

Scirpus diphyllus, RETZ., Obs. V. p. 15 (1789)

Fimbristylis diphylla, VAHL., Enum. II. p. 289 (1806); NEES, in Nov. Act. Acad. Nat. Cur. XIX. Supp. I. p. 81 (1843); BENTH., Fl. Hongk. p. 392 (1861); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 636 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 233 (1903); DIELS, Fl. Cent. Chin. p. 229 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 148 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 483 (1906); NAK., Fl. Kor. II. p. 291 (1911)

Fimbristylis laxa, VAHL., Enum. II. p. 292 (1806); KUNTH, Enum. Pl. II. p. 232 (1837)

Fimbristylis tomentosa, VAHL., Enum. II. p. 290 (1806); NEES, in HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 225 (1836-40), et in Nov. Act. Acad. Nat. Cur. XIX. Supp. I. p. 81 (1843); FR., in Mem. Soc. Sc. Nat. Cherb. XXIV. p. 264 (1884)

Fimbristylis depauperata, R. BR., Prodr. p. 227 (1810)

Fimbristylis communis, KUNTH, Enum. Pl. II. p. 234 (1837) p.p.

Nom. Jap. *Tentuki*

Leg. Ipse, Aug. 11, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines, India, Australia, Europe.

Note. Grows in cultivated or waste lands at low altitudes.

Fimbristylis autumnalis, ROEM. et SCHULT., Syst. II. p. 97 (1817); KUNTH, Enum. Pl. II. p. 227 (1837); FR. et SAV., Enum. Pl. Jap. II. p. 119 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 147 (1905); YAMAZUTA, List Manch. Pl. p. 49 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1472 (1931)

Nom. Jap. *Hime-tentuki*

Leg. Ipse, Sept. 5, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Tanegasima, Manchuria.

Note. Occurs in waste lands at low altitudes.

Fimbristylis complanata, LINK, var. **Kraussiana**, CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 646 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 231 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 148 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1473 (1931)

Syn. *Fimbristylis Kraussiana*, HOCHST.; KRAUSS. in Flora. XXVIII. p. 757 (1845)

Fimbristylis connectens, THW., Enum. Pl. Zeyl. p. 349 (1864)

Fimbristylis Pierotii, MIQ.; MORI, Enum. Pl. Cor. p. 74 (1922)

Nom. Jap. *Notentuki*

Leg. Ipse, Aug. 6, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Korea, China, India, Africa.

Note. Occurs on wet ground and in waste places at low altitudes.

Fimbristylis ferruginea, VAHL., Enum. II. p. 291 (1806); KUNTH, Enum. Pl. II. p. 236 (1837); HOOK. et ARN., Bot. Capt. Beech. Voy. p. 312 (1840); BENTH., Fl. Hongk. p. 391 (1861); BOECK., in Linn. XXXVII. p. 16 (1871); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 638 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 235 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 149 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 483 (1906); DUNN et TUTCH. Fl. Kwang. & Hongk. p. 299 (1912);

CAMUS, in Lecomte Fl. Ind. Chin. VII. 2. p. 103 (1912); MORI, Enum. Pl. Cor. p. 73 (1922); MERR., Enum. Philipp. Pl. I. p. 123 (1922); RIDLEY, Fl. Malay, V. p. 156 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 254 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1473 (1931)
Syn. *Scirpus ferrugineus*, LINN., Sp. Pl. ed. 1. p. 50 (1753)

Fimbristylis arvensis, VAHL., Enum. II. p. 291 (1806); KUNTH, Enum. Pl. II. p. 237 (1837)

Fimbristylis tristachya, R. BR., Prodr. p. 226 (1810); NEES, in Nov. Act. Acad. Cur. XIX. Supp. I. p. 76 (1843)

Nom. Jap. *Sima-tentuki*

Leg. Ipse, Jun. 14, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Bonins, Korea, China, Philippines, India.

Note. The species grows on rocky ground near the sea shore, and is common in warm countries, and especially flourishes by the seashore where the influence of sea water is felt.

Fimbristylis longispica, STEUD., Syn. Cyper. p. 118 (1855); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 639 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 239 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 150 (1905); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 299 (1912); MORI, Enum. Pl. Cor. p. 73 (1922); YAMAZUTA, List Manch. Pl. p. 49 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1474 (1931)

Syn. *Fimbristylis Buergeri*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 144 (1865); FR. et SAV., Enum. Pl. Jap. II. p. 119 (1876)

Fimbristylis spadica, var. *major*, BOECK., in Linn. XXXVII. p. 20 (1871)

Fimbristylis Didrichsenii, BOECK., in Engl. Bot. Jahrb. V. p. 505 (1884) p.p.

Nom. Jap. *Otentuki*

Leg. Ipse, Onoaida.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Korea, Manchuria, China.

Note. Occurs in waste lands near the sea level.

Fimbristylis miliacea, VAHL., Enum. II. p. 287 (1806); KUNTH, Enum. Pl. II. p. 230 (1837); BENTH., Fl. Hongk. p. 393 (1861); BOECK., in Linn. XXXVII. p. 42 (1871), et in Engl. Bot. Jahrb. VI. p. 51 (1885); FR., Pl. David. I. p. 318 (1884); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 644 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 239 (1903); DIELS, Fl. Centr. Chin. p. 229 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 150 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 484 (1906); NAK., Fl. Kor. II. p. 290 (1911), et in Bull. Biogeogr. Soc. Jap. I. p. 254 (1930); MERR., Enum. Philipp. Pl. I. p. 124 (1922); YAMAZUTA, List Manch. Pl. p. 49 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1474 (1931)

Syn. *Scirpus miliaceus*, LINN., Syst. ed. 10. p. 868 (1759); THUNB., Fl. Jap. p. 37 (1784) p.p.

Trichelostylis meliacea, NEES, Wight, Cont. p. 103 (1834), et in HOOK. et ARN. Bot. Capt. Beech. Voy. p. 226 (1836)

Nom. Jap. *Hideriko*

Leg. Ipse, Aug. 6, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Bonins, Korea, Manchuria, China, Philippines.

Note. Occurs in marshy places or in rice fields; very frequent in warmer countries.

Fimbristylis monostachya, HASSK., Pl. Jav. Rar. p. 61 (1848); HANCE, in Journ. Linn. Soc. XIII. p. 132 (1873); BENTH., Fl. Austral. VII. p. 308 (1878); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 649 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 240 (1903); MATSUM. et HAY., Enum. Pl. Formos. p. 484 (1906); MERR., Fl. Manila, p. 117 (1912), et Enum. Philipp. Pl. I. p. 124 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 1474 (1931)

Syn. *Cyperus monostacyus*, LINN., Mant. II. p. 180 (1771)

Abildgaardia monostachya, VAHL., Enum. II. p. 296 (1806); KUNTH, Enum. Pl. II. p. 247 (1839); BENTH., Fl. Hongk. p. 389 (1851); BOECK., in Linn. XXXVII. p. 53 (1871)

Abildgaardia compressa, PRESL, Rel. Haenk. I. p. 179 (1828); MIQ., Fl. Ind. Bat. III. p. 297 (1856)

Abildgaardia Rottboelliana, NEES, in WIGHT Contrib. p. 95 (1834), et in HOOK. et ARNOT. Bot. Capt. Beech. Voy. p. 272 (1836-40)

Nom. Jap. *Yari-tentuki*

Leg. Ipse, Aug. 7, 1924.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines:

Note. Occurs on sandy beaches or in open grassland; common in warmer regions.

Fimbristylis Sieboldii, MIQ., Cat. Mus. Bot. Lugd. Bat. p. 118 (1870 nom. nud.; FR. et SAV., Enum. Pl. Jap. II. p. 118 (1876); C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 243 (1903); MATSUM., Ind. Pl. Jap. II. I. p. 151 (1905); NAK., Fl. Kor. II. p. 291 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 1475 (1931)

Syn. *Fimbristylis sieboldii*, (non MAXIM.) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 144 (1865)

Nom. Jap. *Isoyama-tentuki*

Leg. Y. KUDO! Aug. 1907.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Korea, China.

Note. Occurs on rocks and in rocky or sandy beaches.

Fimbristylis spathacea, ROTH, Nov. Pl. Sp. p. 24 (1821); KUNTH, Enum. Pl. II. p. 246 (1837); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 640 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 244 (1903); MATSUM., Ind. Pl. Jap. II. I. p. 152 (1905); MERR., Enum. Philipp. Pl. I. p. 126 (1922)

Syn. *Scirpus glomeratus*, (non LINN.) RETZ., Obs. IV. p. 11 (1786)

Fimbristylis Wightiana, NEES ab ESENB., in WIGHT Bot. Ind. p. 99 (1834), et in Linn. IX. p. 290 (1834); KUNTH, Enum. Pl. II. p. 241 (1837); MORI, Enum. Pl. Cor. p. 74 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1476 (1931)

Fimbristylis glomerata, NEES, in Linn. IX. p. 290 (1834); KUNTH, Enum. Pl. II. p. 246 (1837); BOECK., in Linn. XXXVII. p. 47 (1871) p.p.

Fimbristylis rigida, KUNTH, Enum. Pl. II. p. 241 (1837)

Fimbristylis biumbellata, BOECK., in Flora, XLI. p. 603 (1858)

Nom. Jap. *Siokaze-tentuki*

Leg. Ipse, Kurio, Jul. 4, 1928.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines

Note. Occurs on rocks or on rocky ground.

Fimbristylis sub-bispicata, NEES et MEYER, Nov. Act. Acad. Nat. Cur. XIX. Supp. I

p. 75 (1843); BENTH., Fl. Hongk. p. 391 (1861); HANCE, in Journ. Bot. XVII. p. 16 (1879); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 634 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 245 (1903); KOM., Fl. Mansh. I. p. 346 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 152 (1905); NAK., Fl. Kor. II. p. 291 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 299 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 94 (1918); MERR., Enum. Philipp. Pl. I. p. 126 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1475 (1931)

Syn. *Fimbristylis japonica*, SIEB. et ZUCC., ex STEUD. in ZOLL. Verz. Ind. Arch. II. p. 63 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 117 (1876)

Fimbristylis bispicata, NEES, in HOOK. et ARN. Bot. Capt. Beech. Voy. p. 224 (1841)

Nom. Jap. Yamai

Leg. Ipse, Aug. 7, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. Occurs as undergrowth in wet places in the laurisilvae or in the lauriculusilvae.

Bulbostylis, KUNTH, Enum. Pl. II. p. 205 (1837);

LEMÉE, Dict. Gen. Pl. Phan. I. p. 711 (1929)

Bulbostylis barbata, KUNTH, Enum. Pl. II. p. 203 (1837); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 651 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 247 (1903); MAK., in Tokyo Bot. Mag. IX. p. (390) (1895); PALIB., Consp. Fl. Kor. III. p. 18 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 97 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 487 (1906); NAK., Fl. Kor. II. p. 295 (1911); YABE, Enum. Pl. Manch. p. 18 (1912); CAMUS, in LECOMTE, Fl. Ind. Chin. VII. 2. p. 126 (1912); MERR., Enum. Philipp. Pl. I. p. 127 (1922), et Enum. Hainan Pl. p. 39 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 46 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1414 (1931)

Syn. *Scirpus capillaris*, LINN., Sp. Pl. ed. 2. p. 73 (1763) partim.

Scirpus barbatus, ROTTB., Descr. I. p. 52, t. 17, f. 4 (1773); HANCE, in Journ. Linn. Soc. XIII. p. 131 (1873); BOECK., in Linn. XXXVI. p. 751 (1839-70)

Isolepis barbata, R. BR., Prodr. p. 212 (1810); NEES, in HOOK. et ARN. Bot. Capt. Beech. Voy. p. 226 (1836); BENTH., Fl. Hongk. p. 393 (1861)

Oncostylis barbata, NEES, in Hook. Journ. Bot. Kew Miscel. VI. p. 29 (1854)

Isolepis Cumingii, STEUD., Syn. Glum. II. p. 101 (1855)

Fimbristylis barbata, BENTH., Fl. Austral. VII. p. 32 (1878)

Nom. Jap. Hatagaya

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines.

Note. Occurs on cultivated or sandy ground near the sea level.

Cladium, P. BR., Hist. Jamaica, p. 114 (1756);

SCHRAD., Fl. Germ. I. p. 74 (1806); KUNTH, Enum. Pl. II. p. 303 (1837); ENDL., Gen. Pl. n. 980 (1836-40); BENTH. et HOOK., Gen. Pl. II. p. 1065 (1833); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 116 (1887); LEMÉE, Dict. Gen. Pl. Phan. II. p. 178 (1930)

Syn. *Baumea*, GAUDICH, in Bot. Voy. Freycinet p. 416, t. 29 (1826)

Chapelliera, NEES, in Linn. IX. p. 298 (1834)

Cladium glomeratum, R. BR., Prodr. p. 237 (1810); KUNTH, Enum. Pl. II. p. 304 (1837); BENTH., Fl. Austral. VII. p. 404 (1878); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 675 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 262 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 139 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1462 (1931)

Syn. *Baumea Brownei*, BOECK., in Linn. XXXVIII. p. 242 (1874)

Baumea rubiginosa, BOECK., in Linn. XXXVIII. p. 241 (1874)

Chapelliera glomerata, NEES, in LEHM. Pl. Preiss. II. p. 76 (1846-48; FR. et SAV., Enum. Pl. Jap. II. p. 121 (1876)

Nom. Jap. *Anperai*

Leg. Onoaida, Jun. 23, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, China, Australia, New Zealand, Bengal.

Note. Occurs on sunny but wet ground at low altitudes; widely distributed, but not so common in southern Japan.

Cladium mariscus, R. BR., Prodr. p. 236 (1810; KUNTH, Enum. Pl. II. p. 303 (1837); BENTH., Fl. Hongk. p. 397 (1861); BOECK., in Linn. XXXVIII. p. 232 (1874); HOOK. f., Fl. Brit. Ind. VI. p. 673 (1894); NAK., Fl. Kor. II. p. 513 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1462 (1931)

Syn. *Cladium jamaicense*, CRANTZ, Inst. I. p. 362 (1766; FORB. et HEMSL., Ind. Fl. Sin. III. p. 262 (1903; New Gen. & Sp. p. 124 (1908; et III. Cyp. t. 82, ff. 7-8 (1909); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 302 (1912; NAK., in Bull. Biogeogr. Soc. Jap. I. p. 254 (1930)

Cladium leptostachyum, NEES, in Linn. IX. p. 301 (1834; et in HOOK. et ARN. Bot. Capt. Beech. Voy. p. 227 (1841); HANCE, in Journ. Linn. Soc. Bot. XIII. p. 132 (1873)

Schoenus Mariscus, LINN., Sp. Pl. ed. 1. p. 42 (1753)

Nom. Jap. *Hitomoto-susuki*

Leg. Ipse, Miyanoura, Sept. 8, 1926.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Bonins, Taiwan, Korea, China, Polynesia, Africa.

Note. Occurs on marshy ground near the sea level.

Rhynchospora, (*Rynchospora*) VAHL., Enum. II.

p. 229 (1806; ENDL., Gen. Pl. n. 967 (1836-40; KUNTH, Enum. Pl. II. p. 287 (1837; PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 116 (1887; C. B. CLARKE, in Bull. Misc. Add. sér. VIII. p. 117 (1908)

Syn. *Phaeocephalum*, EHRH., Beitr. IV. p. 146 (1789)

Triodon, L. C. RICH., in PERSOON, Synops. I. p. 6 in note. (1805

Rhynchospora glauca, VAHL. var. *chinensis*, CLARK., in Bull. Acad. Intern. Geogr. Bot. p. 198 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 159 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 49 (1929)

Syn. *Rhynchospora glauca*, VAHL.; MAK. et NEM., Fl. Jap. ed. 2. p. 1480 (1931)

Nom. Jap. *Torano-hanahige*

Leg. Ipse, Jul. 25, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. Occurs in marshy places in waste lands in the laurisilvae or in the lauriculisilvae; rather common in Japan.

Rhynchospora rubra, MAK., in Tokyo Bot. Mag. XVII. p. 180 (1903; MERR., Enum. Philipp. Pl. I. p. 130 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 1480 (1931,

Syn. *Schoenus ruber*, LOUR., Fl. Cochinch. p. 41 (1790)

Rhynchospora Haenkei, PRESL, Rel. Haenk. I. p. 199 (1828); KUNTH, Enum. Pl. II. p. 290 (1837); MIQ., Fl. Ind. Bat. III. p. 336 (1856)

Haplostylis Meyenii, NEES, in Edinb. New Phil. Journ. no. 34, p. 265 (1834), et in HOOK. et ARN. Bot. Capt. Beech. Voy. p. 227 (1836-40)

Morisia Wallichii, NEES, in Edinb. New Phil. Journ. n. 34, p. 265 (1834)

Cephaloschoenus parvus, NEES, in Linn. IX. p. 295 (1834), et in Nov. Act. Nat. Cur. XIX. Supp. I. p. 100 (1843)

Rhynchospora Wallichiana, KUNTH, Enum. Pl. II. p. 289 (1837); STEUD., Syn. Cyp. p. 148 (1855); BENTH., Fl. Hongk. p. 396 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 145 (1865); BOECK., in Linn. XXXVII. p. 542 (1873) p.p., et in Engl. Bot. Jahrb. VI. p. 51 (1885); FR. et SAV., Enum. Pl. Jap. II. p. 121 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 159 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 491 (1906)

Sphaeroschoenus Wallichii, ARN. et NEES, in Nov. Act. Nat. Cur. XIX. Supp. I. p. 97 (1843)

Rhynchospora Wallichiana, C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 668 (1893), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 260 (1903)

Nom. Jap. *Igakusa*

Leg. Ipse, Jun. 24, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines, India.

Note. Occurs in somewhat wet grassland.

Rhynchospora yakusimensis, MASAMUNE, sp. nov.

Syn. *Rhynchospora Umemurae*, MAK. var. *yakusimensis*, MASAMUNE, in Trans. Nat. Hist. Soc. Formos. XXIII. p. 210 (1933)

Nom. Jap. *Yakusima-hime-inunohige*

Leg. Hananoegô, Aug. 30, 1926.

Distr. Endemica.

Note. The species is found on boggy ground distributed in the higher regions of the island and composes one of the elements of *Rhynchospora-Eriocaulon* Association. It is restricted to this island.

Scleria, BERG., in Vet. Akad. Handl. Stockholm. XXVI. p. 142, t. 425 (1765); ENDL., Gen. Pl. n. 964 (1836-40); KUNTH, Enum. Pl. II. p. 339 (1837); BENTH. et HOOK. f., Gen. Pl. III. p. 1070 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. ii. p. 120 (1887); C. B. CLARK., in Bull. Miscel. Kew. Add. sér. VIII. p. 131 (1908)

Syn. *Diaphora*, LOUR., Fl. Cochinch. p. 578 (1790)

Scleria scrobiculata, NEES, ab. MEYEN. in Wight, Contrib. Bot. Ind. p. 117 (1834), et in Nov. Act. Nat. Cur. XIX. Suppl. I. p. 119 (1843); KUNTH, Enum. Pl. II. p. 342 (1837); MIQ., Fl. Ind. Bat. III. p. 342 (1856); BOECK., in Linn. XXXVIII. p. 508 (1874); MAK., in Tokyo Bot. Mag. X. p. 65 (1896); C. B. CLARK., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 266 (1903), et in Bull. Miscel. Kew. Add. VIII. p. 133 (1908); MATSUM., Ind. Pl. Jap. II. 1. p. 165 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 492 (1906); MERR., Enum. Philipp. Pl. I. p. 135 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1487 (1931)

Syn. *Scleria tessellata*, (non WILLD.) DECAIS., in Nouv. Ann. Mus. III. p. 362 (1834)
Scleria Neesiana, HOOK. et ARN., Bot. Capt. Beech. Voy. p. 229 (1836-40)

Scleria keyensis, K. SCHUM., in Engl. Bot. Jahrb. XIII. p. 267 (1891)

Nom. Jap. *Ô-sinzyugaya*

Leg. Ipse, Jun. 24, 1928.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines, Java, Malay, New Guinea.

Note. Occurs in the lowlands; common in southern Japan.

Carex, [DILL., ex LINN. Syst. ed. 1 (1735)] et Sp.

Pl. ed. 1. p. 972 (1753); ENDL., Gen. Pl. n. 957 (1836-40); KUNTH, Enum. Pl. II.

p. 368 (1837); BENTH. et HOOK. f., Gen. Pl. III. p. 1073 (1883); PAX, in ENGL. u.

PRANT. Nat. Pfl.-fam. II. ii. p. 122 (1887); KUKENTHAL, in ENGL. Pfl.-reich. IV.

20 (Heft 38) p. 67 (1909); LEMÉE, Dict. Gen. Pl. Phan. I. p. 836 (1929)

Syn. *Physiglochis*, NECK, Elem. III. p. 245 (1790)

Pseudocarex, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 146 (1865)

Carex atroviridis, OHWI, Contr. Caricolog. As. Orient. II. p. 241 (1931)

Nom. Jap. *Yakusima-suge*

Leg. Ipse, Jul. 12, 1928.

Distr. Endemica.

Note. Occurs in the Pseudosasa Owatarii Association.

Carex breviculmis, R. BR. Subsp. *Royleana*, NEES, ex Wight Contr. Bot. Ind. p. 127

(1834); KUKENTH., in Engl. Pfl.-reich. IV. 20 (Heft 38) p. 469 (1909); NAK., Fl.

Kor. II. p. 318 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 47 (1929); YAMAZUTA,

List Manch. Pl. p. 39 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1417 (1931)

Syn. *Carex Royleana*, NEES, ab ESENB., in Wight Bot. Ind. p. 127 (1834); KUNTH,

Enum. Pl. II. p. 441 (1837); FR. et SAV., Enum. Pl. Jap. II. p. 138 (1876);

MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 250 (1931)

Carex puberula, BOOTT, in A. GRAY, Narr. Exp. Perry II. p. 324 (1857)

Carex breviculmis, BOOTT, Illustr. IV. p. 181 (1867) partim; FR. et SAV., Enum.

Pl. Jap. II. p. 136 (1876); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p.

746 (1894), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 276 (1903); FR., in

Nouv. Arch. Mus. Paris. III. sér. IX. p. 192 (1897); KOM., Fl. Mansh. I. p.

374 (1901); PALIB., Consp. Fl. Kor. III. p. 122 (1901)

Nom. Jap. *Ao-suge*

Leg. Ipse, Kusugawa, Jul. 12, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Grows in cultivated lands, by the roadside, on waste lands at low altitudes; common in Japan.

f. aphanandra, KUKENTHAL, in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 470 (1909); MAK.

et NEM., Fl. Jap. ed. 1. p. 1332 (1925), et ed. 2. p. 1417 (1931); MASAMUNE, Prel.

Rep. Veg. Yak. p. 47 (1929)

Nom. Jap. *Yakusima-aosuge*

Leg. Ipse, Yaegadake, 1927.

Distr. Endemica.

Note. Grows from the sea level up to about 700 m in the island.

Carex Doniana, SPRENG., Syst. Veg. III. p. 825 (1826); FR. et SAV., Enum. Pl. Jap. II.

p. 152 (1879); AKIYAMA, Consp. Car. Jap. p. 196, f. 141 (1932)

Syn. *Carex chlorostachys*, (non STEVEN) D. DON, in Trans. Linn. Soc. XIV. p. 330 (1825); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 263 (1931)

Carex japonica, (non THUNB.) BOOTT, Ills. II. p. 88, t. 257 (1860); BOECK., in Linn. XLI. p. 283 (1877); HOOK. f., Fl. Brit. Ind. IV. p. 736 (1886)

Carex patens, FR., in Bull. Soc. Par. 8 sér. VII. p. 90 (1895)

Carex japonica, var. *alopecurioides*, (non CLARKE) FR., in Nouv. Arch. X. p. 78 (1898)

Carex baviensis, FR., Carex de L'Asie Orientale p. 77 (1898)

Carex alopecurioides, var. *chlorostachya*, C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 271 (1903) p.p.

Carex japonica, THUNB. var. *chlorostachys*, KÜKENTHAL, apud MATSUM. Ind. Pl. Jap. II. 1. p. 116 (1905), et in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 620 (1909); NAK., Fl. Kor. II. p. 327 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 47 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1431 (1931)

Nom. Jap. *Sira-suge*

Leg. Ipse, Jun. 6, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China, India.

Note. Occurs from the sea level up to about 700 m, and is common in eastern Asia.

Carex filicina, NEES, in Wight Contrib. p. 123 (1834); KUNTH, Enum. Pl. II. p. 510 (1837); BOECK., in Linn. XL. p. 352 (1876); C. B. CLARKE, in HOOK. f. Fl. Brit. Ind. VI. p. 717 (1885); FR., in Nouv. Arch. Mus. sér. 3, VIII. pp. 254, 260 (1896); DIELS, Fl. Cent. Chin. p. 231 (1900); FORB. et HEMSL., Ind. Fl. Sin. III. p. 285 (1903); KÜKENTHAL, in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 274 (1909); MAK. et NEM., Fl. Jap. ed. 2. p. 1424 (1931); AKIYAMA, Consp. Car. Jap. p. 85 (1932)

Syn. *Carex ceylonica*, BOECK., in Linn. XL. p. 341 (1876); KÜKENTHAL, in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 279 (1909)

Nom. Jap. *Hanabi-suge*

Leg. NAOHARA! Jul. 22, 1930,

Distr. Kyûsyû, Taiwan, China, India, Malay.

Note. The species is found in sunny but damp places such as the edges of clearings on the southern side of the island, and is widely distributed in Japan.

Carex gibba, WAHLENBERG, in Vet. Acad. Handl. Stockholm. XXIV. p. 148 (1807); KUNTH, Enum. Pl. II. p. 420 (1837); BOOTT, Carex, p. 187 (1867); BOECK., in Linn. XXXIX. p. 127 (1875); FR. et SAV., Enum. Pl. Jap. II. p. 132 (1879); FR., in Nouv. Arch. Mus. Paris, III. sér. VIII. p. 236 (1896); KÜKENTHAL, in ENGL. Pfl.-reich. IV. 20. (Heft 38) p. 238 f. 37 L. M. (1909); MATSUM., Ind. Pl. Jap. II. 1. p. 111 (1905); DIELS, Fl. Cent. China p. 230 (1900); MAK. et NEM., Fl. Jap. ed. 2. p. 1427 (1931); AKIYAMA, Consp. Car. Jap. p. 83 (1932)

Syn. *Carex remota*, (non LINN.) THUNB., Fl. Jap. p. 37 (1784)

Carex anomala, (non STEUD.) BOOTT, in Perry, Exped. Jap. p. 327 (1856); PALIBIN, Consp. Fl. Kor. III. p. 121 (1901)

Carex alta, var. *brevior*, LÉV. et VANIOT, in Bull. Acad. Geogr. Bot. III. sér. X. p. 126 (1901)

Nom. Jap. *Masukusa*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. The plant grows in thickets in the low lands; and is common in Japan proper, but not yet reported in lands further south than this island.

Carex ischnostachya, STEUD., Syn. Cyp. p. 222 (1855); FR., in Nouv. Arch. Mus. Paris, III. sér. X. p. 47 (1898); C. B. CLARKE, in FORB. et HEMSL., Ind. Fl. Sin. III. p. 292 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 114 (1905); KUKENTHAL, in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 614 (1909); NAK., Fl. Kor. II. p. 326 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 1430 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 261 (1931); AKIYAMA, Consp. Car. Jap. p. 189 (1932)

Syn. *Carex Ringgoldiana*, BOOTT, in GRAY, Bot. Jap. p. 149 (1858); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 149 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 148 (1876)

Carex Ringgoldiana, BOOTT, var. *stenandra*, FR. et SAV., Enum. Pl. Jap. II. p. 577 (1876)

Nom. Jap. *Zyuzu-suge*

Leg. Ipse, Jun. 7, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea, China.

Note. The species grows in somewhat wet places and it is not yet reported in lands further south than Okinawa.

Carex Krameri, FR. et SAV., Enum. Pl. II. pp. 124, et 551 (1876); FR., in Nouv. Arch. Mus. Paris, III. sér. VIII. p. 200, t. 2. f. 4 (1896); AKIYAMA, Consp. Car. Jap. p. 53 f. 7 (1932)

Syn. *Carex Onoei*, FR. et SAV. var. *Krameri*, KUKENTH., apud MATSUM. Ind. Pl. Jap. II. 1. p. 124 (1905), et in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 101 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 47 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1442 (1931)

Nom. Jap. *Kohansuge*

Leg. Ipse, Jun. 12, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû.

Note. The species is often found in marshy places in the lauri-aciculisilvae, and has its southern limit of habitat in this island.

Carex macrocephala, WILLD. var. *kobomugi*, MIY. et KUDO, Fl. Hokk. & Saghal. II. p. 221 (1931); AKIYAMA, Consp. Car. Jap. p. 67 (1932)

Syn. *Carex macrocephala*, non WILLD.) GRAY, Pl. Jap. p. 328 (1856); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 147 (1865); FR. et SAV., Enum. Pl. Jap. II. p. 132 (1876); FR., in Nouv. Arch. Mus. Paris. III. sér. VIII. p. 237 (1896); KOM., Fl. Mansh. I. p. 356 (1901); C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 296 (1903) p.p.; MATSUM., Ind. Pl. Jap. II. 1. p. 119 (1905) p.p.; KUKENTHAL, in ENGL. Pfl.-reich. VI. 20, (Heft 38) p. 187 (1909) p.p.; NAK., Fl. Kor. II. p. 306 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 47 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1436 (1931) p.p.

Carex Kobomugi, OHWI, Contrib. Car. As. Or. I. p. 281 (1930)

Nom. Jap. *Kobômugi*

Leg. Ipse, Jul. 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria.

Note. This psammophyte is found on the sea beaches, and is common in South Japan.

Carex Morrowii, BOOTT, var. *laxa*, OHWI, Contrib. Car. As. Or. I. p. 260 (1930)

Nom. Jap. *Yakusima-kansuge*

Leg. Ipse, Jul. 16, 1922.

Distr. Endemica.

Note. Grows in the lauri-aciculisilvae as undergrowth, or in somewhat sunny places; is restricted to this island.

Carex nagatadakensis, MASAMUNE, sp. nov.

Syn. *Carex Doenitzii*, (non BOECK.) MASAMUNE, Prel. Rep. Veg. Yak. p. 47 (1929)

Culmus electus ca. 40 cm altus laevis, vix ad supra medium usque foliatus. Vaginae infimae brevissime foliiferae rubrofuscae. Folia culmo subaequalia, ca. 4-5 mm lata. Bractee foliaceo-subulatae rubro-fuscae, foliaceae haud variantes inflorescentiam superans. Spiculae 2-3 subdistantes oblongae, inferiores graciliter pedunculatae, superiores subsessiles, suprema breviter pedunculata tota mascula, omnes fuscae. Squamae rubrofuscae femineae et masculae lanceolatae longe attenuatae in cuspidem flavum desinentes. Squamae femineae utriculos occulantes cum cuspidem 12 mm longae. Utriculi pallide virentes erecti ovato-lanceolati membranacei 3-4 mm longi, 1.5 mm lati, vix glabri, apice longe rostrati, rostro profunde bifido, lobis aristaeformibus ca. 2 mm longis. Stylus filiformis ca. 15 mm longus, bifidus. Nux plano-ellipticus glaber ca. 2 mm longus.

Nom. Jap. *Yakusima-kotanukiran*

Leg. Ipse, Nagatadake, Jun. 12, 1928.

Distr. Endemica.

Note. The new species is closely related to *C. Okuboi*, but its "crura" is much longer than that of the latter, and the spike is not sessile. It is a noteworthy fact that *Carex* Sect. *Frigidae* which abounds in northern regions has one of its representatives in this island, which shows that the island has a close connection with the northern regions.

Carex oahuensis, MEYER, in Mem. Acad. St. Petersburg. I. p. 218 (1831)

var. **robusta**, FR. et SAV., Enum. Pl. Jap. II. p. 563 (1876 ; OHWI, in Contrib. Car. As. Or. I. p. 287 (1930 ; AKIYAMA, Cons. Car. Jap. p. 204, f. 148 (1932

Syn. *Carex Bongardi*, (non BOOTT) MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 150 (1866

Carex Bongardi, β *robusta*, FR. et SAV., Enum. Pl. Jap. II. p. 561 (1876)

Carex oahuensis, var. *Boottiana*, KUKENTH., in ENGL. Pfl.-reich. IV. 20. (Heft 38) p. 632 (1909 ; NAK., Fl. Kor. II. p. 329 (1911) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1441 (1931)

Carex stupenda, LÉVEL. et VANT ; MASAM., Prel. Rep. Veg. Yak. p. 47 (1929)

Nom. Jap. *Isosuge*

Leg. Ipse, ca. Kusugawa

Distr. Honsyū, Kyūsyū, Amami-Ōshima, Okinawa, Korea.

Note. Occurs on rocky ground in the littoral regions.

Carex Ohwii, MASAMUNE, nom. nov.

Syn. *Carex Omiana*, var. *yakushimana*, OHWI, in Act. Phyt. I. p. 71 (1932)

Nom. Jap. *Yakusima-kawazusuge*

Leg. Ipse, Jul. 11, 1922.

Distr. Endemica.

Note. This endemic species is often found in the alpine region especially in the *Pseudosasa Owatarii* Association.

Carex rara, BOOTT, var. *biwensis*, KUKENTH., apud MATSUM, Ind. Pl. Jap. II. 1. p. 130 (1905), et in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 102 (1909); NAK., Fl. Kor. II. p. 302 (1911); MAK. et NEM., Fl. Jap. ed. 2 p. 1448 (1931); AKIYAMA, Consp. Car. Jap. p. 54 (1932)

Syn. *Carex biwensis*, FR., in Bull. Soc. Philom. Paris. Sér. 8 VII. p. 28 (1895), et in Nouv. Arch. Mus. sér. III. VIII. p. 197, t. 2. f. 2. (1896); C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 275 (1903)

Nom. Jap. *Matubasuge*

Leg. Ipse, Kosugidani, Jun. 7, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. I was able to find this variety on marshy ground scattered in the laurisilvae or in the lauri-aciculisilvae. It is rather widely distributed in Japan proper.

Carex sociata, BOOTT, in Mém. Americ. Acad. n. sér. VI. p. 420, et II. Carex IV. p. 200 (1867); FR., Carex Asi.-Orient. p. 59 (1898); C. B. CLARKE, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 311 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 133 (1905); OHWI, Contr. Car. As. Orient. I. p. 262 (1930); AKIYAMA, Cons. Car. Jap. p. 200 (1932)

Syn. *Carex chinensis*, non RETZ! FR., in Nouv. Arch. Mus. Paris III. sér. IX. p. 182 (1897); KUKENTH., in ENGL. Pfl.-reich. IV. 20, (Heft 38) p. 625 (1909) p.p.; FORB. et HEMSL., Ind. Fl. Sin. III. p. 280 (1903); MATSUM. et HAY., Enum. Pl. Formos. p. 494 (1906); MAK. et NEM., Fl. Jap. ed. 2. p. 1420 (1931)

Carex nexa, var. *strictior*, KUKEN., ex MATSUM. Ind. Pl. Jap. II. 1. p. 122 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 496 (1906)

Carex ligata, var. *strictior*, KUKEN., in ENGL. Pfl.-reich. IV. 20, Heft 38 p. 474 (1909); MASAMUNE, Prel. Rep. Veg. Yak. p. 47 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1434 (1931)

Nom. Jap. *Sinasuge*

Leg. Ipse, Mart. 1, 1923.

Distr. Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. The species is found in the lowlands near the sea level and in open sunny ground, and has not yet been reported in lands further north than this island.

Carex tenuissima, BOOTT, in Proc. Linn. Soc. I. p. 288 (1845; FR. et SAV., Enum. Pl. Jap. II. p. 147 (1876); FR., in Nouv. Arch. Mus. Paris. III. sér. X. p. 63 (1898); LÉVEL. et VANT., in Bull. Acad. Géogr. Bot. XI. p. 109 (1902); MATSUM., Ind. Pl. Jap. II. 1. p. 135 (1905); KUKENTH., in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 475 (1909); NAK., Fl. Kor. II. p. 319 (1911); MIY. et KUDO, Fl. Hokk. & Sagh. II. p. 251 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1458 (1931); AKIYAMA, Consp. Car. Jap. p. 144 (1932)

Nom. Jap. *Itosuge*

Leg. Ipse, Jul. 30, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. Occurs on marshy ground in the laurisilvae or in the lauri-aciculisilvae and marks its southern limit in this island.

Carex telogyne, BOOTT, var. *scabriculumis*, KUKENTH., in ENGL. Pfl.-reich. IV. 20 (Heft 38) p. 602 (1909); NAK., Fl. Kor. II. p. 325 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 48 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1456 (1931); AKIYAMA, Consp. Car. Jap. p. 183 f. 129 (1932)

Nom. Jap. *Husanakirisuge*

Leg. Ipse, Yaegadake, 1922.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| <i>Fimbristylis autumnalis</i> , ROEM. & SCHULT. | | | | + | + | + | + | + | + | | | + |
| <i>Fimbristylis complanata</i> , LINN. var. <i>Kraussiana</i> , CLARKE | | | | + | | | | + | + | + | + | + |
| <i>Fimbristylis ferruginea</i> , VAHL. | + | + | + | + | + | | | + | + | + | + | + |
| <i>Fimbristylis longispica</i> , STEUD. | | | | + | | + | + | + | + | + | | + |
| <i>Fimbristylis miliacea</i> , VAHL. | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Fimbristylis monostachya</i> , HASSK. | + | | + | + | + | + | + | | | | | + |
| <i>Fimbristylis Sieboldii</i> , MIQ. | | | | | + | | | + | + | + | + | + |
| <i>Fimbristylis spathacea</i> , ROTH. | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Fimbristylis sub-bispicata</i> , NEES & MEY. | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>Bulbostylis barbata</i> , KUNTH | + | + | + | + | | | | + | + | + | + | + |
| <i>Cladium glomeratum</i> , R. BR. | | | | + | | | | + | - | + | | + |
| <i>Cladium mariscus</i> , R. BR. | + | + | + | + | + | + | + | + | + | + | | + |
| <i>Rhynchospora glauca</i> , VAHL. var. <i>chinensis</i> , CLARKE | | | | + | + | + | + | + | + | + | | |
| <i>Rhynchospora rubra</i> , MAK. | + | + | + | + | + | | | + | + | + | | + |
| <i>Rhynchospora yakusimensis</i> , MASAMUNE | | | | | | | | | | | | |
| <i>Scleria scrobiculata</i> , NEES. & MEY. | + | + | + | + | + | | | | | | | + |
| <i>Carex atroviridis</i> , OHWI. | | | | | | | | | | | | |
| <i>Carex breviculmis</i> , R. BR. subsp. <i>Royleana</i> , NEES | | + | + | + | + | + | + | + | + | + | + | + |
| <i>C. b. form. aphanandra</i> , KUKENTH. | | | | | | | | | | | | |
| <i>Carex Doniana</i> , SPRENG. | | | | + | + | + | + | + | + | + | + | + |
| <i>Carex filicina</i> , NEES | + | | | | | | | + | | | | + |
| <i>Carex gibba</i> , WAHLENGER | | | | | | | | + | + | + | + | + |
| <i>Carex ischnostachya</i> , STEUD. | | + | + | | | | | + | + | + | + | + |
| <i>Carex Krameri</i> , FR. et SAV. | | | | | | | | + | + | + | + | |
| <i>Carex macrocephala</i> , WILLD. var. <i>kobomugi</i> , MIY. et KUDO | + | + | + | | | | | + | + | + | + | + |
| <i>Carex Morrowii</i> , BOOTT, var. <i>laxa</i> , OHWI | | | | | | | | | | | | |
| <i>Carex nagatadakensis</i> , MASAMUNE | | | | | | | | | | | | |
| <i>Carex oahuensis</i> , MEY. var. <i>robusta</i> , FR. & SAV. | + | + | + | | | | | + | + | + | | |
| <i>Carex Ohwii</i> , MASAMUNE | | | | | | | | | | | | |
| <i>Carex rara</i> , BOOTT, var. <i>biwensis</i> , KUKENTH. | | | | | | | | + | + | + | + | + |
| <i>Carex sociata</i> , BOOTT. | + | + | + | + | | | | | | | | |
| <i>Carex tenuissima</i> , BOOTT. | | | | | | | | + | + | + | + | + |
| <i>Carex teiogyna</i> , BOOTT, var. <i>scabriculumis</i> , KUKENTH. | | | | | | | | | + | + | | |

| Names of Plants | Regions | | | | | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|------------|--------------|--------|--------|---------------------|-------------------------|-----------|------------------------------|--------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamchatka | Manchuria, Amur & Ussuri |
| <i>Carex yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | | |
| Total | 52 | 20 | 8 | 30 | 34 | 20 | 42 | 39 | 38 | 33 | 13 | | 3 | 18 |
| Percentage | 38 | 15 | 58 | 65 | 65 | 38 | 81 | 75 | 73 | 63 | 25 | | 6 | 35 |
| | | | | | | | | | | | | | | |
| (Southern elements 38 | | | | | | | | | | Northern elements 4 | | | | |

The genus *Carex* is supposed to have originated in northern lands, because it has numerous species in the northern part of the earth. Several representatives of this genus which are indigenous to this island have their southern limit here and have a close relation with the north. On the contrary Genera *Fimbristylis*, *Cyperus*, *Kyllingia*, *Bulbostylis* are thought to have originated in tropical and in subtropical regions and their representatives in Yakusima denote that the island is closely related to the southern lands. But most of those species are also found in lands further north than Yakusima. Considering these facts I should like to conclude that the island is closely related to the northern lands so far as the phytogeography of *Cyperaceous* plants is concerned.

Palmaceae

Palmaceae, LINDL., Veg. Kind. ed. 3. p. 134 (1753)

Syn. *Palmae*, B. JUSS., in Hort. Trianon (1759); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 1 (1889)

Livistona, R. BR., Prodr. p. 267 (1810); ENDL., Gen. Pl. n. 1754 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 929 (1883); DRUDE, in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 35 (1889); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 133 (1932)

Acorus, [LINN., Gen. Pl. ed. 1. p. 104 (1737)] et Sp. Pl. ed. 1. p. 324 (1753); ENDL., Gen. Pl. n. 1708 (1836-40); KUNTH, Enum. Pl. III. p. 86 (1841); ENGL., in DC. Monogr. Phan. II. p. 215 (1879); BENTH. et HOOK. f., Gen. Pl. III. p. 999 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 118 (1889), et in Pfl.-reich. IV. 23 (Heft 21) p. 303 (1905); LEMÉE, Dict. Gen. Pl. Phan. I. p. 44 (1929)

Acorus gramineus, SOLAND, in AIT. Hort. Kew. p. 474 (1789; WILLD., Sp. Pl. II. p. 199 (1799); KUNTH, Enum. Pl. III. p. 87 (1841; ENGL., in DC. Monogr. Phan. II. p. 218 (1879); HOOK. f., Fl. Brit. Ind. VI. p. 556 (1894); DIELS, Fl. Cent. Chin. p. 234 (1900); FORB. et HEMSL., Ind. Fl. Sin. III. p. 187 (1903); ENGL., in Engl. Pfl.-reich. IV. 23 (Heft 21) p. 312 (1905); MATSUM., Ind. Pl. Jap. II. 1. p. 168 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 460 (1906); MORI, Enum. Pl. Cor. p. 78 (1922); MERR., Enum. Pl. Philipp. I. p. 175 (1922), et Enum. Hainan Pl. p. 43 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1494 (1931)

Syn. *Acorus terrestris*, SPRENG., Syst. Veg. II. p. 118 (1825; SCHOTT, Prodr. Aroid. p. 579 (1860)

Acorus calamus, LOUR., Fl. Cochinch. p. 203 (1790; BENTH., Fl. Hongk. p. 345 (1861)

Acorus tatarinowii, SCHOTT, in Österr. Bot. Zeit. p. 101 (1859)

Acorus calamus, var. *terrestris*, ENGL., in DC. Monogr. Phan. II. p. 217 (1879)

Nom. Jap. *Sekisyô*

Leg. Ipse, Jun. 26, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Taiwan, Korea, China, Philippines.

Note. The species is found as undergrowth in the laurisilvae and in wet places e.g. along streams. It is found from South Japan to the Philippines and South China.

Alocasia, NECK., Elem. III. p. 289 1790; SCHOTT, in SCHOTT et ENDL. Melet. p. 18 (1832; ENDL., Gen. Pl. n. 1683b 1836-40); ENGL., in DC. Monogr. Phan. II. p. 491 (1879; BENTH. et HOOK. f., Gen. Pl. III. p. 975 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 137 (1889; ENGL. u. KRAUSE, in ENGL. Pfl.-reich. IV. 23 (Heft 71) p. 71 (1920; LEMÉE, Dict. Gen. Pl. Phan. I. p. 167 (1929)

Alocasia macrorrhiza, SCHOTT, in SCHOTT et ENDL. Melet. p. 18 (1832, in Öster. Bot. 18, Wochenbl. IV. p. 409 (1854; Gen. Aroid. t. 40 (1858, et Prodr. p. 146 (1860); MIQ., Fl. Ind. Bat. III. p. 205 (1856); FR. et SAV., Enum. Pl. Jap. II. p. 8 (1876); BENTH., Fl. Austral. VII. p. 155 (1878); ENGL., in DC. Monogr. Phan. II. p. 502 (1879); MAK., in Tokyo Bot. Mag. V. p. 126 (1891); HOOK. f., Fl. Brit. Ind. VI. p. 526 (1893; FORB. et HEMSL., Ind. Fl. Sin. III. p. 184 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 169 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 458 (1906); ENGL. u. KRAUSE, in ENGL. Pfl.-reich. IV. 23 (Heft 71) p. 84, t. 15 (1920); MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1496 (1931)

Syn. *Arum macrorrhiza*, LINN., Fl. Zeyl. p. 327 (1747), et Sp. Pl. ed. 1. p. 965 (1753)

Arum mucronatum, LAM., Encycl. III. p. 12 (1789)

Colocasia macrorrhiza, R. BR., Prodr. Fl. Nov. Holl. p. 336 (1810)

Colocasia macrorrhiza, SCHOTT, in SCHOTT et ENDL. Melet. I. p. 18 (1832)

Colocasia mucronata, KUNTH, Enum. III. p. 40 (1841)

Alocasia indica, (non SCHOTT) NAVES, Novis App. p. 293 (1882); ENGL. u. KRAUSE, in ENGL. Pfl.-reich. IV. 23 E. (Heft 71) p. 87 (1920) p.p.

Nom. Jap. *Kuwazuimo*

Leg. Ipse, Jun. 20, 1927.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. The species is found in the laurisilvae as undergrowth from the sea level up to about 600 m and is also found in tropical and subtropical countries of eastern Asia.

Arisaema, MART., in Flora XIV. p. 458 (1831); ENDL., Gen. Pl. n. 1674 (1836-40); KUNTH, Enum. Pl. III. p. 15 (1841); ENGL., in DC. Monogr. Phan. II. p. 533 (1879), in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 150 (1889), et in ENGL. Pfl.-reich. IV. 23 F. (Heft 73) p. 149 (1920); BENTH. et HOOK. f., Gen. Pl. III. p. 965 (1883); LEMÉE, Dict. Gen. Pl. Phan. I. p. 381 (1929)
Syn. *Amidena*, RAF., Fl. Tellur. IV. p. 15 (1836)
Dochafa, SCHOTT, Synops. Aroid. p. 24 (1856)

Arisaema heterocephalum, KOIDZ., in Pl. Nov. Amami-Ôsima, p. 12 (1928)

Nom. Jap. *Hosoba-tennansyô*

Leg. Ipse, Jul. 25, 1924.

Distr. Amami-Ôsima.

Note. Occurs as undergrowth in somewhat wet places, in the laurisilvae, or in the lauri-aculisilvae, from 400 m up to 700 m above the sea level.

Arisaema japonicum, BL., Rumphia, I. p. 106 (1855) excl. Syn.; KUNTH, Enum. Pl. III. p. 19 (1841) excl. syn.; SCHOTT, Prodr. Aroid. p. 40 (1860) excl. syn.; MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 202 (1866) p.p.; FR. et SAV., Enum. Pl. Jap. II. p. 5 (1876) p.p.; ENGL., in DC. Monogr. Phan. II. p. 549 (1879); MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929)

Syn. *Arisaema serratum*, SCHOTT, var. *Blumei*, MAK., in Tokyo Bot. Mag. XV. p. 129 (1901); MATSUM., Ind. Pl. Jap. II. 1. pp. 170, 171 (1905)

Nom. Jap. *Tennansyô*

Leg. Ipse, Jul. 22, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima.

Note. Occurs in the lauri-aculisilvae as undergrowth; rather common in South Japan.

Arisaema nanum, NAK., in Tokyo Bot. Mag. XLIII. p. 532 (1929); MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1499 (1931)

Nom. Jap. *Himetennansyô*

Leg. Ipse, Jun. 11, 1928.

Distr. Kyûsyû.

Note. The plant occurs in the Pseudosasa Owatarii Association from 1700 m up to 1900 m and is restricted to this island and South Kyûsyû.

Arisaema Negishii, MAK., in Journ. Jap. Bot. I. p. 41 (1918); NAK., in Tokyo Bot. Mag. XLIII. p. 529 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1500 (1931)

Syn. *Arisaema heterophyllum*, (non BL.) BROWN, in Journ. Linn. Soc. XVIII. p. 250 (1881)

Arisaema koreanum, ENGL., in ENGL. Pfl.-reich. IV. 23. F. (Heft 73) p. 186. (1920)

Nom. Jap. *Simatennansyô*

Leg. Ipse, Aug. 1931.

Distr. Honsyû, Kyûsyû, Korea.

Note. Occurs in the laurisilvae as undergrowth.

Arisaema ringens, SCHOTT, var. *praecox*, ENGL., in DC. Monogr. Phan. II. p. 535 (1879); MAK., in Tokyo Bot. Mag. VII. p. 301 (1894); MATSUM., Ind. Pl. Jap. II. 1. p. 170 (1905); ENGL., in ENGL. Pfl.-reich. IV. 23 F (Heft 73) p. 210 (1920) MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1501 (1931)

Syn. *Arisaema praecox*, de VRIESE, Cat. Hort. Spaurenberg, ex. C. KOCH. in Allgem. Gartenzeit. p. 87 (1857); SCHOTT, Prodr. Aroid. p. 32 (1860); HOOK., in Bot. Mag. t. 5267 (1861); FR. et SAV., Enum. Pl. Jap. II. p. 4 (1876)

Arisaema ringens, SCHOTT, in Fl. des Serres XII. p. 167, tt. 1269, 1270 (1857); REGEL, in Gartenfl. p. 1. t. 313 (1861); FR. et SAV., Enum. Pl. Jap. II. p. 4 (1876); NAK., Fl. Kor. II. p. 271 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 50 (1929)

Nom. Jap. *Murasaki-musasiabumi*

Leg. Ipse, Jul. 16, 1922.

Distr. Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan, Korea, China.

Note. Occurs as undergrowth in the lauri-aciculisilvae; common in South Japan.

Arisaema serratum, SCHOTT, var. *euserratum*, ENGL., in ENGL. Pfl.-reich. IV. 23. F (Heft 73) p. 206 (1920) excl. fig.

Syn. *Arum Dracunculus*, (non LINN.) THUNB., Fl. Jap. p. 233 (1784) p.p.

Arum Dracontium, (non LINN.) THUNB., Fl. Jap. p. 233 (1784)

Arum serratum, THUNB., in Trans. Linn. Soc. II. p. 338 (1792), et Ic. Pl. Jap. IV. t. 7 (1802); WILLD., Sp. Pl. IV. 1. p. 479 (1805); POIRET, Suppl. Encycl. Méth. II. p. 820 (1811); SPRENG., Syst. Veg. III. p. 770 (1825)

Arisaema serratum, SCHOTT, in SCHOTT et ENDL. Melet. Bot. p. 17 (1832'; BL., Rumph. I. p. 107 (1835); KUNTH, Enum. Pl. III. p. 19 (1841); SCHOTT, Syn. Aroid. p. 29 (1856), et Prodr. Syst. Aroid. p. 41 (1860); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 202 (1866); FR. et SAV., Enum. Fl. Jap. II. p. 5 (1876)

Arisaema serratum, SCHOTT, f. *Thunbergii*, MAK., in Tokyo Bot. Mag. XV. p. 128 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 170 (1905); NAK., in Tokyo Bot. Mag. XLIII. p. 535 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1501 (1931)

Nom. Jap. *Murasakimamusigusa*

Leg. Ipse, Jun. 26, 1927.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The plant is found as undergrowth in the lauri-aciculisilvae or the laurisilvae.

Pinellia, TENORE, in Atti III. Rium. Scienz. Ital. p. 522 (1830); SCHOTT, Syn. Aroid. p. 5 (1856); ENDL., Gen. Pl. n. 1693 (1836-40); ENGL., in DC. Monogr. Phan. II. p. 565 (1879), et in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 151 (1889); BENTH. et HOOK. f., Gen. Pl. III. p. 964 (1883)

Syn. *Atherurus*, BL., Rumphia I. p. 136 (1835)

Pinellia tripartita, SCHOTT, Syn. Aroid. p. 5 (1856), et Prodr. p. 20 (1860); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 201 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 3 (1876); ENGL., in DC. Monogr. Phan. II. p. 566 (1879); BROWN, in FORB. et HEMS. Ind. Fl. Sin. III. p. 174 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 173 (1905);

MASAMUNE, Prel. Rep. Veg. Yak. p. 51 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1506 (1931)

Syn. *Atherurus tripartitus*, BL., Rumphia I. p. 137, tt. 31. et 37f. 1835); KUNTH, Enum. Pl. III. p. 54 (1841)

Arisaema tripartitum, ENGL., in DC. Monogr. Phan. II. p. 538 (1879)

Nom. Jap. Óchange

Leg. Ipse, Miyanoura, Sept. 1, 1931.

Distr. Honsyú, Sikoku, Kyúsyú, Amami-Ósima, Okinawa, China.

Note. In the laurisilvae about 200 m above the sea level I once found this species on humus ground. The species is widely distributed in South Japan.

| Names of Plants | Regions | | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|-----------------------|--------------|--------|--------|-------|-------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ósima | Tanegasima | Kyúsyú Prop. | Sikoku | Honsyú | Korea | Yezo & Southern Kuriles |
| <i>Acorus gramineus</i> , SOLAND | + | + | | | | + | + | + | + | | |
| <i>Alocasia macrorrhiza</i> , SCHOTT. | | | + | + | + | + | + | + | | | |
| <i>Arisaema heterocephalum</i> , KOIDZ. | | | | | + | + | | | | | |
| <i>Arisaema japonicum</i> , BL. | | | | | + | + | + | + | + | | |
| <i>Arisaema nanum</i> , NAK. | | | | | | | + | | | | |
| <i>Arisaema Negishii</i> , MAK. | | | | | | | + | | + | + | |
| <i>Arisaema ringens</i> , SCHOTT, var. <i>praecox</i> , ENGL. | | | + | + | | | + | + | + | + | |
| <i>Arisaema serratum</i> , SCHOTT, var. <i>euserratum</i> , ENGL. | | | | | | | + | + | + | | |
| <i>Pinellia tripartita</i> , SCHOTT. | | | | + | + | | + | + | + | | |
| Total | 9 | 1 | 3 | 3 | 4 | 4 | 8 | 6 | 6 | 3 | |
| Percentage | 11 | 33 | 33 | 33 | 44 | 44 | 89 | 67 | 67 | 33 | |
| (Southern elements 6) | | | | | | (Northern elements 9) | | | | | |

As regards this family the island is represented by nine elements out of which three have their southern limit here. So from this point of view the island shows a closer relationship to the northern regions.

Lemnaceae

Lemnaceae, DUMORT., Fl. Belg. p. 147 (1827)

Lemna, [LINN., Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 970 (1753); ENDL., Gen. Pl. n. 1668 (1836-40); KUNTH, Enum. Pl. III. p. 4 (1841); BENTH. et HOOK. f., Gen. Pl. III. p. 1001 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. iii. p. 164 (1889)

Syn. *Lenticula*, ADANS., Fam. II. p. 471 (1763)

Lemna paucicostata, HEGELMAIER, Lemn. p. 139, t. 8 (1868), et ENGL. Bot. Jahrb. XXI. p. 294 (1895); FR. et SAV., Enum. Pl. Jap. II. p. 12 (1876); HOOK. f., Fl. Brit. Ind. VI. p. 556 (1894); MAK., in Tokyo Bot. Mag. IX. p. 230 (1895); KOM., Fl. Mansh. I. p. 417 (1901); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 188 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 174 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 462 (1906); MERR., Enum. Philipp. Pl. I. p. 190 (1922); RIDLEY, Fl. Malay Pen. V. p. 132 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 51 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1508 (1931)

Nom. Jap. *Aoukikusa*

Leg. Ipse, Nagata, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Manchuria, China, Philippines.

Note. I have once collected the species in the rice fields, but it is not very abundant here. It is widely distributed in warmer countries.

| Name of Plant | Regions | | | | | | | | | | | |
|--|-------------|--------|--------|---------|-------------|---------|------------|--------------|--------|--------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Ryûkyûs | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | China |
| <i>Lemna paucicostata</i> , HEGELMAIER | + | + | + | + | + | | + | + | + | + | | + |

In the island only one cosmopolitan species is present.

Eriocaulaceae

Eriocaulaceae, LINDL., Veg. King. p. 122 (1847)

Syn. *Eriocauloneae*, RICH., in Ann. Mus. Paris. XVII. p. 62 (1811)

Eriocaulaea, KUNTH, Enum. Pl. III. p. 492 (1841)

Eriocaulon, [LINN., Gen. Pl. ed. 2. p. 35 (1742)] et Sp. Pl. ed. 1. p. 87 (1753); KUNTH, Enum. Pl. III. p. 539 (1841); BENTH. et

HOOK. f., Gen. Pl. III. p. 1020 (1883); HIERON, in ENGL. u. PRANTL Nat. Pfl.-fam. II. iv. p. 26 (1887); RUHLAND, in ENGL. Pfl.-reich. IV. 30 (Heft 13) p. 30 (1903), et in ENGL. u. PRANT. Nat. Pfl.-fam 2-auf. B. 15a. p. 49 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 921 (1930)

Syn. *Randalia*, PETIV., Gazophyl. t. 53 (1709)

Nasmythia, HUDZ., Fl. Angl. ed. 2. p. 414 (1762)

Leucocephala, ROX., Fl. Ind. III. p. 612 (1832)

Eriocaulon cinereum, R. BR., Prodr. p. 254 1810; BENTH., Fl. Austr. VII. p. 193 1878; MERR., Enum. Philipp. Pl. I. p. 192 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 51 1929)

Syn. *Eriocaulon sexangulare*, MART., in WALL. Pl. As. Rar. III. p. 28 1832; MAXIM., Diagn. Pl. As. Rar. VIII. p. 10 (1892); RUHL., in ENGL. Bot. Jahrb. XXVII. p. 83 1899)

Leucocephala spathacea, ROX., Fl. Ind. III. p. 613 (1832)

Eriocaulon Sieboldianum, SIEB. et ZUCC., ex STEUD. Syn. Pl. Cyp. II. p. 272 1855; HOOK. f., Fl. Brit. Ind. VI. p. 577 1894; MAK., in Tokyo Bot. Mag. VIII. p. 507 1894; WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 200 1903; RUHL., in ENGL. Pfl.-reich. VI. 30 Heft 13 p. 111 1903; MATSUM., Ind. Pl. Jap. II. 1. p. 177 1905; MATSUM. et HAY., Enum. Pl. Formos. p. 467 1906; NAK., Fl. Kor. II. p. 282 1911; MAK. et NEM., Fl. Jap. ed. 2. p. 1514 (1931)

Eriocaulon heteranthum, BENTH., Fl. Hongk. p. 382 1851)

Nom. Jap. *Hosikusa*

Leg. Ipse, Onoaida.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Philippines, India.

Note. Occurs in rice-fields and ditches.

Eriocaulon decemflorum, MAXIM., f. *coraeum*, NAK., in MATSUM. Ic. Pl. Koishik. II. p. 47 Pl. 108 1914; MASAMUNE, Prel. Rep. Veg. Yak. p. 51 1929

Nom. Jap. *Tanna-inunohige*

Leg. Ipse, Aug. 31, 1928.

Distr. Kyûsyû, Korea.

Note. The plant is found in marshy places scattered among the Pseudosasa Owatarii Association and is not yet reported in lands further south than this island.

Eriocaulon hananoegoensis, MASAMUNE, sp. nov.

Syn. *Eriocaulon atrum* (non NAK. MASAMUNE, Prel. Rep. Veg. Yak. p. 51 1929

Acaules, glabri. Radix alba, subulata, basi latissima ca. 2 cm longa, 1.5-2 mm lata. Pedunculi graciles, pauci, 2 cm alti glabri haud torti; vaginae laxiusculae oblique fissae; capitula semiglobosa laxiflora; bractae involucratae ovatae obtusae glabrae stramineo-flavidulae ca. 2 mm longae 1 mm latae; apice rotundatae vel vix acutae bractae flores stipantes obovatae obtusiusculae glabrae flavido-nigriusculae; flores trimeri. Fl. ♂ sepala spathaceo-connata, glabra nigriuscula tenui-membranacea. Petala 3 elongato-deltoides parva aequalia antherae oblongae nigrae. Fl. ♀ sepala in spatham illi floris ♂ similem connata. Petala 3, libera unguiculato-spathulata, basi angusta supura media intus glandulifera.

Nom. Jap. *Yakusima-hosikusa*

Leg. Ipse, ca. 1700 m alt. Hananoegô.

Distr. Endemica.

Pollicia japonica, THUNB., Diss. I. Nov. Gen. I. p. 11 (1781), Fl. Jap. p. 138 (1784), et Ic. Pl. Jap. III. t. 5 (1801); WILLDN., Sp. Pl. II. p. 149 (1799); ROEM. et SCHULT., Syst. VII. p. 1149 (1829-30); KUNTH, Enum. Pl. IV. p. 75 (1843); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 143 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 94 (1876); C. B. CLARKE, in DC. Monogr. Phan. III. p. 122 (1881); MATSUM., in Tokyo Bot. Mag. XII. p. 1. (1899); MATSUM. et HAY., Enum. Pl. Formos. p. 445 (1906); MORI, Enum. Pl. Cor. p. 81 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 52 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1519 (1931)
Syn. Amilema japonicum, KUNTH, Enum. Pl. IV. p. 70 (1843)

Nom. Jap. *Yabumyōga*

Leg. Ipse, Hirauti, Jun. 29, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Okinawa, Taiwan, Korea.

Note. Occurs in somewhat wet places in the laurisilvae as undergrowth.

Pollia minor, HONDA, in Tokyo Bot. Mag. XLV. p. 2 (1931); MAK. et NEM., Fl. Jap. ed. 2. p. 1519 (1931)

Nom. Jap. *Koyabu-myōga*

Leg. Ipse, Issō, Mart. 21, 1923.

Distr. Okinawa, Taiwan.

Note. Occurs in the same environment as the previous species.

Aneilema, R. BR., Prodr. p. 270 (1810); ENDL.,

Gen. Pl. n. 1028 b. (1836-40); C. B. CLARKE, in DC. Monogr. Phan. III. p. 195

1881; BENTH. et HOOK. f., Gen. Pl. III. p. 849 (1883); SCHONLAND, in ENGL. u.

PRANT. Nat. Pfl.-fam. II. iv. p. 64 (1888); BRUCK., in id. 2-auf. B. 15a. p. 175

1930; LEMÉE, Dict. Gen. Pl. Phan. I. p. 258 (1929)

Syn. *Aphylax*, SALISB., in Trans. Hort. Soc. I. p. 27 (1812)

Anilema, KUNTH, Enum. Pl. IV. p. 64 (1843)

Aneilema Kicisak, HASSK., Commel. Ind. p. 32 (1870); C. B. CLARKE, in DC. Monog.

Phan. III. p. 209 (1881); FR., Pl. David. I. p. 310 (1884); DIELS, Fl. Cent. Chin.

p. 237 1900; KOM., Fl. Mansh. I. p. 421 (1901); E. BROWN, in FORB. et HEMSL.

Ind. Fl. Sin. III. p. 152 1903; MATSUM., Ind. Pl. Jap. II. 1. p. 178 (1905); MATSUM.

et HAY., Enum. Pl. Formos. p. 447 (1906); NAK., Fl. Kor. II. p. 265 (1911);

MASAMUNE, Prel. Rep. Veg. Yak. p. 51 (1929); MAK. et NEM., Fl. Jap. ed. 2. p.

1517 1931

Syn. *Aneilema oliganthum*, FR. et SAV., Enum. Pl. Jap. II. pp. 94 et 532 (1876)

Nom. Jap. *Ibokusa*

Leg. Ipse, Aug. 18, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Occurs in wet lands near rice-fields; common in South Japan.

Aneilema malabaricum, MERR., in Philipp. Journ. Sc. VII. Bot. p. 232 (1912), Enum.

Philipp. Pl. I. p. 196 (1922), et Enum. Hainan Pl. p. 45 (1927)

Syn. *TraDESCANTIA malabarica*, LINN., Sp. Pl. ed. 2. p. 412 (1762)

Commelina nudicaulis, BURM. f., Fl. Ind. p. 17, t. 8, f. 1. (1768)

Aneilema nudiflorum, R. BR., Prodr. p. 271 (1810); MIQ., Fl. Ind. Bat. III. p.

537 (1859); BENTH., Fl. Hongk. p. 376 (1861); C. B. CLARKE, in DC. Monogr.

Phan. II. p. 210 (1876); HOOK. f., Fl. Brit. Ind. VI. p. 378 (1892); E. BROWN,

in FORB. et HEMSL. Ind. Fl. Sin. III. p. 153 (1903); MATSUM., Ind. Pl. Jap.

II. 1. p. 178 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 447 (1906);

RIDLEY, Fl. Malay Penn. IV. p. 355 (1924); MASAMUNE, Prel. Rep. Veg.

Yak. p. 51 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1517 (1931)

Commelina nudiflora, LINN., Mant. I. p. 77 (1767) non Sp. Pl. ed. 1.

Nom. Jap. *Sima-ibokusa*

Leg. Ipse, Jun. 23, 1928.

Distr. Tanegassima, Amami-Ōsima, Okinawa, Taiwan, China, Philippines, Malay, India.

Note. The species is found by the roadside and in waste low lands and is rather common in the southern part of Japan. But it has not yet been found in Kyûsyû.

- Commelina**, [PLUM., ex LINN. Syst. ed. 1 (1735)]
 et Sp. Pl. ed. 1. p. 40 (1753); ENDL., Gen. Pl. n. 1023 (1836-40); C. B. CLARKE, in DC. Monogr. Phan. III. p. 138 (1881); BENTH. et HOOK. f., Gen. Pl. III. p. 847 (1883); SCHONLAND, in ENGL. u. PRANT. Nat. Pfl.-fam. II. iv. p. 63 (1888); BRÜCK., in id. 2-auf. B. 15a. p. 177 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 270 (1930)
Syn. *Erxlebia*, MEDIK., in Act. Acad. Theod. Palat. VI. Phys. p. 494 (1790)
Commelyna, ENDL., Gen. Pl. p. 125 (1836); KUNTH, Enum. Pl. IV. p. 35 (1843)
Omphalotheca, HASSK., in Bull. Congr. Bot. Amsterdam. p. 1856 p. 30 (1866)

Commelina benghalensis, LINN., Sp. Pl. ed. 1. p. 41 (1753); KUNTH, Enum. Pl. IV. p. 50 (1843); WIGHT, Ic. Pl. Ind. Or. VI. p. 29, t. 2065 (1853); MIQ., Fl. Ind. Bat. III. p. 533 (1859); BENTH., Fl. Hongk. p. 376 (1861); C. B. CLARKE, in DC. Monogr. Phan. III. p. 159 (1881), et in FORB. et HEMSL. Ind. Fl. Sin. III. p. 155 (1903); HOOK. f., Fl. Brit. Ind. VI. p. 370 (1892); DIELS, Fl. Cent. Chin. p. 237 (1900); MATSUM., Ind. Pl. Jap. II. 1. p. 179 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 448 (1906); MERR., Enum. Philipp. Pl. I. p. 195 (1922); RIDLEY, Fl. Malay Penn. IV. p. 353 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 52 (1929); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 255 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1518 (1931)
Syn. *Commelina procurrens*, SCHLECHT, in Linnaea XXIV. p. 656 1851, et XXV. p. 183 (1852)

Nom. Jap. *Maruba-tuyukusa*

Leg. Ipse, Jul. 19, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Bonins, China, Philippines, Malay, Java, Tropical Africa and Asia.

Note. Occurs in cultivated or waste lands; common in southern Japan; widely distributed in Africa and Asia.

Commelina communis, LINN., Sp. Pl. ed. 1. p. 40 (1753); THUNB., Fl. Jap. p. 35 (1784); KUNTH, Enum. Pl. IV. p. 36 (1843); BENTH., Fl. Hongk. p. 376 1861; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 142 (1867); DEBEAUX, in Act. Soc. Linn. Bordeaux XXX. p. 117 (1874) et XXXII. p. 27 (1875); HANCE, in Journ. Bot. XI. p. 262 (1874); FR. et SAV., Enum. Pl. Jap. II. p. 92 (1876); C. B. CLARKE, in DC. Monogr. Phan. III. p. 170 (1881); FR., in Mem. Soc. Nat. Cherb. XXIV. p. 260 (1882); KOM., Fl. Mansh. I. p. 420 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 179 (1905); NAK., Fl. Kor. II. p. 264 (1911); MASAMUNE, Prel. Rep. Veg. Yak. p. 52 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1518 (1931)

Syn. *Commelina polygama*, ROTH, Cat. Bot. I. p. 1 (1797); ROEM. et USTERI, Mag. Bot. IV. p. 14 (1790); KUNTH, Enum. Pl. IV. p. 37 (1843)

Nom. Jap. *Tuyukusa*

Leg. Ipse, Nagata, Aug. 21, 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China, Ussuri.

Note. This is a common weed and flourishes in cultivated or waste lands.

Commelina nudiflora, LINN., Sp. Pl. ed. 1. p. 41 (1753); C. B. CLARKE, in DC. Monogr. Phan. III. p. 144 (1881); HOOK. f., Fl. Brit. Ind. VI. p. 369 (1892); E. BROWN, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 156 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 179 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 448 (1906); RIDLEY, Fl.

Malay Penn. IV. p. 352 (1924); MERR., Enum. Hainan Pl. p. 44 (1927); MASA MUNE, Prel. Rep. Veg. Yak. p. 52 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1518 (1931)

Syn. Commelia ochreate, SCHAUER, in Nov. Act. Acad. Cur. XIX. Suppl. I. p. 447 (1843)

Nom. Jap. Sima-tuyukusa

Lcg. Ipse, April. 2, 1927.

Distr. Amami-Ōsima, Kutinoerabu, Okinawa, Taiwan, China, Philippines.

Note. The species grows in waste land or along the roadside. It is rather common in Amami-Ōsima, Okinawa and Formosa, but it is not yet found in lands further north than Yakusima.

| Names of Plants | Regions | | | | | | | | | | | | | | |
|---|---------------------------------|---------|-------------|------------|--------------|-----------------------|--------|-------|-------------------------|--|-------------------------|-------|----|----|--|
| | Philippines Bonins Taiwan | Okinawa | Amami-Ōsima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien Northern Kuriles & Kamtchatka | Manchuria, Amur & Usuri | China | | | |
| <i>Pollia japonica</i> , THUNB. | | + | + | + | | + | + | + | + | | | | | | |
| <i>Pollia minor</i> , HONDA | | + | + | + | | | | | | | | | | | |
| <i>Aneilema Keisak</i> , HASSK. | | + | + | + | | + | + | + | + | | + | + | | | |
| <i>Aneilema malabaricum</i> , MERR. | + | + | + | + | + | | | | | | | + | | | |
| <i>Commelina benghalensis</i> , LINN. | + | + | + | + | | + | + | + | | | | + | | | |
| <i>Commelina communis</i> , LINN. | | + | + | + | + | + | + | + | + | + | + | + | | | |
| <i>Commelina nudiflora</i> , LINN. | + | + | + | + | | | | | | | | + | | | |
| Total | 7 | 3 | 1 | 7 | 7 | 2 | 4 | 4 | 4 | 3 | 1 | 1 | 2 | 5 | |
| Percentage | | 43 | 14 | 100 | 100 | 29 | 57 | 57 | 57 | 43 | 14 | 14 | 29 | 71 | |
| Southern elements 7) | | | | | | (Northern elements 5' | | | | | | | | | |

Considering the above table, the flora of the island appears more closely related to the southern lands than to the northern. So the so-called WATASE's line of the zoogeographers does not acquire any special importance in phytogeography when taking the distribution of only this family into consideration.

Only one species of the family is found in the island and its distribution extends north and south of Yakusima.

Juncaceae

Juncaceae, VENT., Tabl. II. p. 150 (1799) p.p.; ENDL., Gen. Pl. p. 130 (1836)

Juncus, [TOURN., ex LINN. Syst. ed. 1 (1735¹) et Sp. Pl. ed. 1. p. 325 (1753); ENDL., Gen. Pl. n. 1049 (1836-40¹); KUNTH, Enum. Pl. III. p. 315 (1841); BENTH. et HOOK. f., Gen. Pl. III. p. 867 (1883); BUCHENAU, in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 5 (1888), ENGL. Bot. Jahrb. XII. p. 167 (1890), et in ENGL. Pfl.-reich. IV. 36. (Heft 25) p. 98 (1903); VIERHAPPER, in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a p. 214 (1930¹); LEMÉE, Dict. Gen. Pl. Phan. III. p. 826 (1931)]

Syn. *Isoetes*, WEIGEL, Obs. Bot. p. 36, t. 2. f. 7 (1772)

Stygiaria, EHRH., Beitr. IV. p. 146 (1789)

Juncastrum, FOUR., in Ann. Soc. Linn. Lyon. Nouv. sér. XVII. p. 171 (1869)

Juncus decipiens, NAK., Veg. Kamikôti p. 35 (1928); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 299 (1932)

Syn. *Juncus effusus*, LINN. var. *decipiens*, BUCH., in ENGL. Bot. Jahrb. XII. p. 229 (1890), et in ENGL. Pfl.-reich. IV. 36 (Heft 25) p. 136 (1906); MATSUM., Ind. Pl. Jap. II. 1. p. 183 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 53 (1929); YAMAZUTA, List Manch. Pl. p. 55 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1523 (1931)

Juncus effusus, (non LINN.) NAK., Fl. Kor. II. p. 267 (1911)

Nom. Jap. I

Leg. Ipse, Aug. 5, 1924.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. The species grows from the sea level up to about 1900 m in wet places.

Juncus prismatocarpus, R. BR. var. *Leschenaultii*, BUCH. subv. *pluritubulosus*, BUCH., in ENGL. Bot. Jahrb. XII. p. 311 (1890), et in ENGL. Pfl.-reich. IV. 36 (Heft 25) p. 181 (1906); MATSUM., Ind. Pl. Jap. II. 1. p. 185 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1526 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 301 (1932)

Syn. *Juncus prismatocarpus*, MATSUM. et HAY., Enum. Pl. Formos. p. 451 (1906)

Nom. Jip. *Kôgai-zekisyô*

Leg. Ipse, Onoaida, Mart. 24, 1923.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. Occurs in the lowlands among rice-fields.

subvar. *unitubulosus*, BUCH., in ENGL. Bot. Jahrb. XII. p. 312 (1890), et ENGL. Pfl.-reich. IV. 36 (Heft 25) p. 181 (1906); KOM., Fl. Mansh. I. p. 428 (1901), et Fl. Pen. Kamtch. I. p. 281 (1927); MATSUM., Ind. Pl. Jap. II. 1. p. 185 (1905); NAK., Fl. Kor. II. p. 267 (1911); MIY. et MIYAKE, Fl. Sagh. p. 492 (1915); MAK. et NEM., Fl. Jap. ed. 2. p. 1526 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 302 (1932)

Syn. *Juncus Wallichianus*, LAHARPE, Monogr. Junc. p. 139 (1827)

Juncus articulatus, LINN. α *genuina*, et β *acutiflora*, RUPR., in MAXIM. Prim. Fl. Amur. p. 293 (1859); REGEL, Tent. Fl. Uss. p. 157 (1861)

Nom. Jap. *Hari-kôgai-zekisyô*

Leg. Ipse, Jun. 6, 1928.

Distr. Kamtchatka, Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Korea, Manchuria.

Note. The species, including many varieties and species, is widely distributed in the Far East and is found also in India, the Himalaya, Ceylon, Java, Australia, New-Zealand, and Tasmania.

subvar. *viviparus*, KOIDZ., in Tokyo Bot. Mag. XXIX. p. 309 (1915; MASAMUNE, Prel. Rep. Veg. Yak. p. 53 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1526 (1931)

Nom. Jap. *Komoti-kôgai-zekisyô*

Leg. Ipse, Jul. 13, 1923.

Distr. Honsyû, Kyûsyû.

Note. Occurs in open and wet places from 100 m up to 1900 m.

Luzula, DC., in LAM. et DC. Fl. Fr. ed. 3. III. p. 158 1805; ENDL., Gen. Pl. n. 1047 1836-40; KUNTH, Enum. Pl. III. p. 296 1841; BENTH. et HOOK. f., Gen. Pl. III. p. 868 (1883); BUCH., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 7 (1888), in ENGL. Bot. Jahrb. XII. p. 74 (1890), et in ENGL. Pfl.-reich. IV. 36 Heft 25 p. 42 1906; VIERHAPPER, in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 221 1930; LEMÉE, Dict. Gen. Pl. Phan. IV. p. 196 1932

Syn. *Cyperella*, KRAMER, Tent. Bot. p. 41 1744
Juncastrum, HEIST., Syst. p. 12 (1748)
Ischaemon, SCHMEIDEL, in Gesner. Hist. Pl. p. 13 1759
Juncodes, ADANS., Fain. II. p. 47 (1763)
Leucophoba, EHRH., Beitr. IV. p. 148 1789
Luciola, SMITH, Engl. Fl. II. p. 177 1824
Gymnodes, FOURR., in Ann. Soc. Linn. Lyon. Nouv. sér. XVII. p. 172 (1869)
Juncodes, O. KUNTZE, Rev. Gen. Pl. II. p. 722 (1891)

Luzula campestris, DC. var. *capitata*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 165 1867; FR. et SAV., Enum. Pl. Jap. I. p. 97 (1876); BUCH., Monogr. Junc. in Engl. Bot. Jahrb. XII. p. 160 (1890), et in ENGL. Pfl.-reich. IV. 36 (Heft 25 p. 92 (1906); KOIDZ., Pl. Sachal. Nakah. p. 31 (1910); NAK., Fl. Kor. II. p. 268 1911; TAKEDA, Fl. Shikot. p. 490 (1914); MIY. et MIYAKE, Fl. Sagh. p. 494 1915; KUDO, Fl. Paramush. p. 87 (1922); MIURA, List Manch. & Mong. p. 71 1925; MASAM., Prel. Rep. Veg. Yak. p. 53 (1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1527 (1931)

Syn. *Luzula campestris*, var. *congesta*, MIY., Fl. Kuril. p. 267 (1890)

Luzula campestris, DC.; KOM., Fl. Mansh. I. p. 430 (1901)

Luzula capitata, MIY. et KUDO, Fl. Hokk. & Sagh. IH. p. 295 (1932)

Nom. Jap. *Suzume-no-hie*

Leg. Ipse, Mart. 21, 1923.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Bonins, Korea, Manchuria.

Note. Occurs by the roadside, in the lowlands and waste lands.

var. *yakusimensis*, MASAMUNE, in Journ. Trop. Agric. IV. p. 302 (1932)

Syn. *Luzula campestris*, var. *pallescens*, (non WHALENB) MASAMUNE, Prel. Rep. Veg. Yak. p. 53 (1929)

Nom. Jap. Yakusima-suzumenohie

Leg. Ipse, Kuromidake, Jul. 12, 1928.

Distr. Endemica.

Note. Occurs in the Pseudosasa Owatarii Association.

| Names of Plants | Regions | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------|-----------------------|--------|--------|--------|-------|-------------------------|--------------------------------|
| | Philippines | Borins | Taiwan | Okinawa | Anami-Ōsima | Tanegasima | Kyūsyū Prop. | Kyūsyū | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Northern Kuriles & Kamitchatka |
| <i>Juncus decipiens</i> , NAK. | | + | | | | | | + | + | + | + | + | + |
| <i>Juncus prismatocarpus</i> , R. BR. var. <i>Leschenaultii</i> , BUCH. subv. <i>pluritubulosus</i> , BUCH. . | | + | + | + | + | + | + | + | + | + | + | + | + |
| <i>J. p.</i> var. <i>L.</i> subvar. <i>unitubulosus</i> , BUCH. . . | | + | + | | | | | + | + | + | + | + | + |
| <i>J. p.</i> var. <i>L.</i> subvar. <i>viviparus</i> , KOIDZ. . . . | | | | + | | | | + | | + | | | |
| <i>Luzula campestris</i> , DC. var. <i>capitata</i> MIQ. . | + | | | | + | + | + | + | + | + | + | + | + |
| <i>L. c.</i> var. <i>yakusimensis</i> , MASAMUNE | | | | | | | | | | | | | |
| Total | 6 | 1 | 3 | 3 | 2 | 2 | 5 | 4 | 5 | 4 | 4 | 3 | 1 |
| Percentage | | 17 | 50 | 50 | 33 | 33 | 83 | 67 | 83 | 67 | 67 | 50 | 17 |
| (Southern elements 5) | | | | | | | (Northern elements 5) | | | | | | |

As the above table shows the flora of Yakusima has close relationship both to the northern and to southern lands in respect of this family.

Stemonaceae

Stemonaceae, FR. et SAV., Enum. Pl. Jap. II. p. 92 (1879)

Syn. *Roxburghiaceae*, WALL., Pl. As. Rar. III. p. 49 (1832)

Croomia, TORR., ex TORR. et GRAY Fl. North-Amer. I. p. 663 (1840); ENDL., Gen. Pl. Supp. I. p. 1419 n. 4815/1 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 747 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 9 (1888); KRAUSE, in id. 2-auf. B. 15a. p. 226 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 376 (1930)

Syn. *Torreya*, CROOM., ex MEISSN. Gen. p. 340 (1842)

Syn. *Smilax china*, LINN. var. *biflora*, MAK., in Tokyo Bot. Mag. XIV. p. 184 (1900)

Nom. Jap. *Himekakara*

Leg. Ipse, Jun. 10, 1928.

Distr. Amami-Ōshima.

Note. The species is found as undergrowth from 700 m up to 1800 m above the sea level on somewhat sunny open ground. It is restricted to Amami-Ōshima and Yakushima.

Smilax china, LINN., Sp. Pl. ed. 1. p. 1029 (1753¹); THUNB., Fl. Jap. p. 152 (1784); LOUR., Fl. Cochinch. p. 622 (1790¹); KUNTH, Enum. Pl. V. p. 243 (1850); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 149 (1867); MAXIM., in Mél. Biolog. VIII. p. 408 (1871); HANCE, in Journ. Linn. Soc. Bot. XIII. p. 130 (1872); FR. et SAV., Enum. Pl. Jap. II. p. 49 (1876); DC., Monogr. Phan. I. p. 46 (1878); DIELS, Fl. Cent. Chin. p. 255 (1900); PALIB., Consp. Fl. Kor. III. p. 9 (1901); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 96 (1903¹); MATSUM., Ind. Pl. Jap. II. 1. p. 212 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 435 (1906); NAK., Fl. Kor. II. p. 237 (1911); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 278 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 103 (1918); MERR., Enum. Hainan Pl. p. 48 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929); YAMAZUTA, List Manch. Pl. p. 66 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1566 (1931¹); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 347 (1932)

Syn. *Smilax ferox*, WALL., Cat. no. 5119 (1828); BENTH., Fl. Hongk. p. 370 (1861); MOORE, in Journ. Bot. XIV. p. 138 (1878); HOOK. f., Fl. Brit. Ind. VI. p. 307 1894

Coprosmanthus japonicus, KUNTH, Enum. Pl. V. p. 268 (1850)

Smilax japonica, A. GRAY, in Narr. Perr. Exped. p. 320 (1856), et in Mem. Amer. Acad. VI. p. 412 1857

Smilax sebeana, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 149 (1867)

Nom. Jap. *Sarutori-ibara*

Leg. NAOHARA! Onoaida, Mart. 16, 1930.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Tanegasima, Okinawa, Taiwan, Korea, Manchuria, China, Philippines, Eastern Himalaya, Bengal.

Note. Grows in waste lands or in clearings.

var. *yakusimensis*, MASAMUNE, in Journ. Trop. Agr. IV. p. 195 (1932)

Nom. Jap. *Yakusima-kakara*

Leg. Ipse, Yaegadake ca. 1000 m alt. Aug. 30, 1926.

Distr. Endemica.

Smilax Sieboldii, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 150 (1867); MAXIM., in Mél. Biolog. VIII. p. 406 (1871); FR. et SAV., Enum. Pl. Jap. II. p. 49 (1876); DC., Monogr. Phan. I. p. 48 (1878¹); NAK., Fl. Kor. II. p. 237 (1911¹); MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929); YAMAZUTA, List Manch. Pl. p. 66 (1930¹); MAK. et NEM., Fl. Jap. ed. 2. p. 1568 (1931)

Nom. Jap. *Yama-gasyū*

Leg. A. KIMURA! Aug. 8, 1922.

Distr. Honsyū, Sikoku, Kyūsyū, Korea, Manchuria.

Note. This species is not yet found in lands further south than this island.

Smilax stenopetala, A. GRAY, Bot. Jap. p. 412 (1858); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 149 (1867); MAXIM., in Mél. Biolog. VIII. p. 405 (1871); FR. et SAV., Enum. Pl. Jap. II. p. 49 (1876); DC., Monogr. Phan. I. p. 189 (1878); DIELS., Fl.

Distr. Amami-Ōsima, Okinawa, Taiwan.

Note. The species was collected by Dr. KUDO, but I have not yet found it in the island.

In respect of this family the flora of the island shows close relationship to the southern floral regions. In general the plants of this family abound in warmer countries, and it is a noteworthy fact that *Smilax biflora* is restricted to Yakusima and Amami-Ōsima.

Liliaceae

Liliaceae, ADANS., Fam. II. p. 42 (1763)

Syn. *Lilia*, B. JUSS., Hort. Trianon (1759), et ex Juss., Gen. Pl. LXIV. et 48 (1789)

Tofieldia, HUDS., Fl. Angl. ed. 2. p. 157 (1778);

ENDL., Gen. Pl. n. 1062 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 828 (1883);

ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 20 (1888); KRAUSE, in ENGL. u. PRANT. Pfl.-fam. 2-auf. B. 15a. p. 254 (1930)

Syn. *Asphodeliris*, [MOEHR., Hort. Priv. p. 15 (1736)] O. KUNTZE, Rev. Gen. Pl. II. p. 706 (1891)

Heriteria, SCHRANK, Baier. Fl. p. 133 (1789)

Isidrogalvia, RUIZ. et PAV., Fl. Peru. et Chil. III. p. 69 t. 302 (1802)

Iridrogawia, PERS., Synops. I. p. 399 (1805)

Tcfieldia, SCHRANK, in Denkschr. Akad. Munchen. 1813 p. 94 (1814)

Triantha, BAK., in Journ. Linn. Soc. XVII. p. 490 (1879)

Tofieldia Yosiiiana, MAK., in Tokyo Bot. Mag. XXVII. p. 255 (1913); MASAMUNE,

Prel. Rep. Veg. Yak. p. 55 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1572 (1931)

Nom. Jap. *Yakusima-tyabo-zekisyō*

Leg. Ipse, Aikodake, Jul. 12, 1928.

Distr. Endemica.

Note. The species is found in wet and marshy places in the laurisilvae and in the lauri-aculisilvae from 600 m up to 1800 m above the sea level. It is very close to *T. Nuda*, MAXIM., and I would rather prefer to include it in this species. *Tofieldia* is not yet reported further south than this island.

Chionographis, MAXIM., in Bull. Acad. St.

Petersb. XI. p. 435 (1867); BENTH. et HOOK. f., Gen. Pl. III. p. 826 (1883); ENGL.,

in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 22 (1887); KRAUS., in ENGL. u. PRANT.

• Nat. Pfl.-fam. 2-auf. B. 15a. p. 258 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 113 (1930)

Chionographis japonica, MAXIM., in Mém. Biolog. VI. p. 210 (1867); FR. et SAV., Enum.

Pl. Jap. II. p. 86 (1876); BAK., in Journ. Linn. Soc. XVII. p. 469 (1879); MATSUM.,

Ind. Pl. Jap. II. 1. p. 192 (1905); MERR., Enum. Hainan Pl. p. 46 (1927); MAK. et

NEM., Fl. Jap. ed. 2. p. 1542 (1931)

Syn. *Melanthium luteum*, THUNB., Fl. Jap. p. 152 (1784)

Chamaelirium luteum, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 144 (1879)

var. yakusimensis, MASAMUNE, var. nov.

Syn. *Chionographis japonica*, MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929)

Herba minor et tenuiora quam typica. Flores albi.

Nom. Jap. *Yakusima-siraitosô*

Leg. Ipse, Jul. 7, 1928.

Distr. (Sp.) Honsyû, Sikoku, Kyûsyû, China.

Note. The variety grows on the edges of the lauri-aciculisilvae as undergrowth. Type species is reported in Hainan by Dr. MERRILL, but it is not found in Taiwan, Okinawa and Amami-Ôsima.

Heloniopsis, A. GRAY, in Mem. Amer. Acad. 2. sér. VI. p. 416 (1858-59); BENTH. et HOOK. f., Gen. Pl. III. p. 827 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 22 (1888); KRAUSE, in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 259 (1930); LEMÉE, Dict. Gen. Pl. Phan. III. p. 512 (1931)

Syn. *Sugerokia*, MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 144 (1867)

Heleniopsis, BAK., in Journ. Bot. XII. p. 278 (1874)

Helionopsis, FR. et SAV., Enum. Pl. Jap. II. p. 529 (1879)

Heloniopsis japonica, MAXIM. var. *yakusimensis*, MASAMUNE, var. nov.

Herba minora quam typica. Folia rosulata oblanceolata coriaceo-membranacea ca. 3 cm longa 1 cm lata margine vix repanda, apice acuta basi longe attenuata. Scapis 2 cm longis basi foliis minoribus sursum squamis instructis apice 1 vel rarius 2 floriferis. Segmeta perianthii, 6 obovato-elliptica pupureo-candida 5 mm longa 2.5 mm lata apice obtusissima basi vix attenuata. Stamina 6 filamentis ca. 1¹/₂ mm longis glabris, antheris oblongis ca. 2 mm longis 1 mm latis, apice obtusis basi obtusis. Ovarium triangulari-obconicum, stylo 4 mm longo.

Nom. Jap. *Hime-sôzyôbakama*

Leg. Ipse, ca. 1500 m.

Distr. Kyûsyû.

Note. Occurs in wet places in the higher regions of the island.

Metanarthecium, MAXIM., in Bull. Acad. St.-Petersb. XI. p. 438 1867; BENTH. et HOOK. f., Gen. Pl. III. p. 825 1883; ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 22 (1887); KRAUSE, in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15. p. 260 (1930); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 422 (1932)

Metanarthecium luteo-viride, MAXIM., in Mém. Biolog. VI. p. 213 (1867; BAK., in Journ. Linn. Soc. XVII. p. 286 (1875); FR. et SAV., Enum. Pl. Jap. II. p. 88 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 207 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1557 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 310 (1932)

Syn. *Aletris luteo-viridis*, FR., in Journ. de Bot. p. 202 (1896)

Nom. Jap. *Nogiran*

Leg. Ipse, Jul. 31, 1924.

Distr. Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû.

Note. Occurs in the *Pseudosasa* *Owatarii*.

form. *yakusimensis*, MASAMUNE, f. nov.

Planta rosulata; folia obovato-lanceolata apice acuta. Scapus ca. 2-5 cm. longus.

Nom. Jap. *Hime-nogiran*

Leg. Ipse, Aug. 1, 1924.

Distr. Endemica.

Note. Occurs in Hananoegô in the alpine region of the island.

Tricyrtis, WALL., Tent. Fl. Nep. p. 61, t. 46 (1826); ENDL., Gen. Pl. n. 1081 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 831 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 27 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 269 (1930); MASAMUNE, in Journ. Trop. Agr. II. p. 38 (1930).
Syn. *Compsa*, D. DON, Prodr. Fl. Nep. p. 50 (1825)
Compsanthus, SPRENG., Syst. IV. Cur. Post. p. 137 (1827)

Tricyrtis flava, MAXIM., in Mém. Biolog. VI. p. 268 (1867); MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929), et in Journ. Trop. Agr. II. p. 40 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1572 (1931)

Syn. *Tricyrtis nana*, YATABE, in Tokyo Bot. Mag. VII. p. 39, t. 3 (1893)
Tricyrtis flava, MAXIM. var. *nana*, MAK., in Tokyo Bot. Mag. XI. p. 282 (1867); MATSUM., Ind. Pl. Jap. II. 1. p. 216 (1905)

Nom. Jap. *Tyabo-hototogisu*

Leg. Ipse, Kosugidani, Sept. 4, 1926.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species grows as undergrowth in the lauri-aciculisilvae from about 600 m up to 1100 m above the sea level, and is distinguished by its short stem. The plant is not yet reported further south than this island.

Tricyrtis hirta, var. *parviflora*, MASAMUNE, in Journ. Trop. Agric. II. p. 42 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1573 (1931)

Syn. *Uvularia hirta*, THUNB., Fl. Jap. p. 136 (1784)

Tricyrtis parviflora, DAMMER, in Fedde. Rep. XV. p. 367 (1918)

Nom. Jap. *Hototogisu*

Leg. KUDO! Aug. 1907.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû.

Note. I have not collected this *Tricyrtis*, but Dr. KUDO informed me that he had found it in the island. The species is not yet reported in lands further south than this island.

Alectorurus, MAK., in Tokyo Bot. Mag. XXII. p. 14 (1908); KRAUSE, in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 283 (1930); LEMÉE, Dict. Gen. Pl. Phan. I. p. 143 (1929)

Alectorurus yedoensis, (MAXIM.) MAK., in Tokyo Bot. Mag. XXII. p. 16 (1908); MAK. et NEM., Fl. Jap. ed. 2. p. 1534 (1931)

Syn. *Athericum yedoense*, MAXIM., in FR. et SAV. Enum. Pl. Jap. II. pp. 83, et 529 (1876)

Bulbinella yedoensis, MATSUM., in Tokyo Bot. Mag. IX. p. 39 (1901), et Ind. Pl. Jap. II. 1. p. 192 (1905)

Nom. Jap. *Keibiran*

Leg. Ipse, Aug. 10, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The plant is found as a lithophyte or an epiphyte on rocks or on rare occasions on tree trunks in the laurisilvae or in the lauri-aciculisilvae; the species is not yet found in the lands further south than Yakusima.

var. *platypetalus*, MASAMUNE, in Journ. Trop. Agr. II. p. 153 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1534 (1931)

Syn. *Alectorurus platypetalus*, MASAMUNE, Prel. Rep. Veg. Yak. p. 53 (1929)

Nom. Jap. *Yakusima-keibiran*

Leg. Ipse, Aug. 1928.

Distr. Endemica.

Note. This endemic variety is found as a lithophyte in the crevices of the granite rocks which are scattered over the Pseudosasa Owatarii Association.

Dianella, LAM., Encycl. II. p. 276 (1786); ENDL., Gen. Pl. n. 1160 (1836-40); KUNTH, Enum. Pl. p. 42 (1850); BENTH. et HOOK. f., Gen. Pl. III. p. 793 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 39 (1887); KRAUSE, id. 2-auf. B. 15a. p. 295 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 571 (1930)

Syn. *Diana*, LAM., Encycl. II. p. 276 (1786)

Rhuacophila, BL., Enum. Pl. Jav. p. 13 (1827)

Dianella ensifolia, DC., in Red. Lil. I. t. 1 (1802); Bot. Mag. t. 1404 (1811); BAKER, in Journ. Linn. Soc. XIV. p. 576 (1875); HOOK. f., Fl. Brit. Ind. VI. p. 337 (1892); MERR., Enum. Philipp. Pl. I. p. 203 (1922), et Enum. Hainan Pl. p. 47 (1927); RIDLEY, Fl. Malay Penn. IV. p. 329 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1543 (1931)

Syn. *Dracaena ensifolia*, LINN., Mant. I. p. 63 (1767)

Dianella nemorosa, LAM., Encycl. II. p. 276 (1786); MIQ., Fl. Ind. Bat. III. p. 560 (1850); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 119 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 194 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 439 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 280 (1912); NAK., in Bull. Biogeogr. Soc. Jap. I. p. 255 (1930)

Dianella odorata, BL., Enum. Pl. Jav. I. p. 13 (1830); FR. et SAV., Enum. Pl. Jap. II. p. 58 (1876); ENGL., Bot. Jahrb. VI. p. 53 (1885)

Dianella javanica, KUNTH, Enum. Pl. V. p. 52 (1850)

Nom. Jap. *Kikyōran*

Leg. Ipse, Jul. 17, 1922.

Distr. Honsyū, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, Bonins, Philippines, China.

Note. Occurs in dry sunny spots near the sea level; often forms a consociation.

Hosta, TRATT., Arch. Gewachskunde, I. p. 55 (1812); ENDL., Gen. Pl. n. 1100 (1836-40); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 39 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 295 (1930); LEMÉE, Dict. Gen. Pl. Phan. III. p. 652 (1931)

Syn. *Saussurea*, SALISB., in Trans. Linn. Soc. VIII. p. 11. (1807)

Funkia, SPRENG., Anleit. ed. 2. II. 1. p. 246 (1817), et Syst. II. p. 40 (1825); BENTH. et HOOK. f., Gen. Pl. III. p. 774 (1883)

Funkea, O. KUNTZE, Rev. Gen. Pl. II. p. 711 (1891)

Hosta Sieboldiana, ENGL. var. *yakusimensis*, MASAMUNE, in Journ. Trop. Agr. IV. P. 301 (1932)

Syn. *Hosta Sieboldiana*, ENGL. var. *longipes*, (non MATSUM.) MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929)

Nom. Jap. *Yakusima-gibōsi*

Leg. Ipse, Kosugidani, Jun. 21, 1927.

Distr. Endemica. (sp.) Honsyū, Kyūsyū.

Note. The variety is found on wet ground about 600 m above the sea level. The type species *Hosta Sieboldiana* has not yet been discovered in the lands further south than this island.

Hemerocallis, [LINN., Syst. ed. 1. (1735)] et Sp. Pl. ed. 1. p. 324 (1753); ENDL., Gen. Pl. n. 1143 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 773 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 40 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 296 (1930); LEMÉE, Dict. Gen. Pl. Phan. III. p. 515 (1931)

Syn. *Cameraria*, BOEHM., in LUDWIG. Defin. Gen. p. 56 (1760)
Hemerocalis, MURR., Syst. ed. 14. p. 339 (1784)

Hemerocallis disticha, DON var. *kwanso*, NAK., in Tokyo Bot. Mag. XXXVIII. p. (180) (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 317 (1932)

Syn. *Hemerocallis fulva*, var. *Kwanso*, REGEL, in Gartenfl. XV. p. 66, t. 500 (1866); MAK., in Tokyo Bot. Mag. X. p. (142) (1896); MATSUM., Ind. Pl. Jap. II. 1. p. 198 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1548 (1931)

Nom. Jap. *Kanzô*

Leg. Ipse, Ambô, Aug. 10, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû.

Note. Occurs in waste lands among cultivated fields; widely distributed in Japan.

Allium, [TOURN., ex LINN. Syst. ed. 1 (1735.) et Sp. Pl. ed. 1. p. 294 (1753); ENDL., Gen. Pl. n. 1137 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 802 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 55 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 319 (1930); LEMÉE, Dict. Gen. Pl. Phan. I. p. 158 (1929)

Syn. *Cepa*, (TOURN.) ADANS., Fam. II. p. 50 (1763)
Porrum, (TOURN.) ADANS., Fam. II. p. 50 (1763)

Allium Thunbergii, DON, All. Monogr. Mem. Edingb. Werner Soc. VI. p. 84 (1827); KUNTH, Enum. Pl. IV. p. 454 (1843); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 154 (1867); A. GRAY, in Narr. Perry Exped. p. 322 (1856); REGEL, in Act. Hort. Peterop. X. p. 355 (1887), et All. Spec. As. Cent. p. 77 (1887); BAKER et MOORE, in Journ. Linn. Soc. XVII. p. 388 (1879); KOIDZ., in Tokyo Bot. Mag. XXXIX. p. 312 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 53 (1929); YAMAZUTA, List Manch. Pl. p. 58 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1537 (1931)

var. typicum, NAK., in Tokyo Bot. Mag. XLIV. p. 512 (1930)

Syn. *Allium japonicum*, REGEL, Monogr. All. p. 133 (1875); FR. et SAV., Enum. Pl. Jap. II. p. 77 (1876)

Allium chinense, G. DON; MATSUM., Ind. Pl. Jap. II. 1. p. 188 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 439 (1906); NAK., Fl. Kor. II. p. 262 (1911)

Nom. Jap. *Yama-rakkyô*

Leg. Ipse, Wariisi-dake, Jul. 25, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Taiwan, Korea, Manchuria.

Note. Occurs on somewhat wet but open ground, about 1500 m above the sea level.

Lilium, [TOURN., ex LINN. Gen. Pl. ed. 1. p. 91 (1737)] et Sp. Pl. ed. 1. p. 302 (1753); ENDL., Gen. Pl. n. 1098 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 816 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 60 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 329 (1930); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 92 (1932)

Syn. *Lirium*, LINN., Syst. ed. 1 (1735); GMEL., Fl. Siber. I. p. 41 (1747)

Lillium, HILL., Hort. Kew. p. 354 (1768)

Lilium japonicum, HOUTT., Nat. Hist. Pl. XII. p. 243, t. 82, f. 2 (1870); KOIDZUMI, in Tokyo Bot. Mag. XL. p. 332 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1553 (1931)

Syn. *Lilium candidum*, (non LINN.) THUNB., Fl. Jap. p. 133 (1784)

Lilium longiflorum, THUNB., in Trans. Linn. Soc. II. p. 333 (1794), et in Mém. Acad. Soc. Pet. III. p. 203 t. 4 (1811); LEMAIRE, in Fl. de. Ser. III. t. 270 (1847); SPAE, in Mém. Gen. Lis. p. 13 (1847); BAKER, in Gard. Chron. p. 479 (1871), et in Journ. Linn. Soc. XIV. p. 229 (1874); FR. et SAV., Enum. Pl. Jap. II. p. 71 (1876); ELWES, Monogr. Lil. t. 7 (1830); WALLACE, Nat. Lil. ed. 2. p. 129 (1891); FR., in Journ. Bot. VI. p. 311 (1832); MATSUM., Ind. Pl. Jap. II. 1. p. 204 (1905); TILTON, in BAILEY, Stand. Cycl. Hort. IV. p. 1857 (1916); WILS., Lil. East. Asia, p. 23 (1925)

Nom. Jap. *Teppōyuri*

Leg. Ipse, Hunayuki.

Distr. Amami-Ōsima, Okinawa, Taiwan.

Note. The lily is rarely found near the sea level in waste lands; it is not yet reported further north than Yukusima.

Lilium Maximowiczii, REGEL, Suppl. Ind. Sem. Hort. Petrop. p. 26 (1836), et in Gartenfl. XVII. p. 322, t. 596 (1868); FR. et SAV., Enum. Pl. Jap. II. p. 65 (1876); ELEWS, Monogr. Lilium. t. 40 (1880); MATSUM., Ind. Pl. Jap. II. 1. p. 204 (1905); MORI, Enum. Pl. Cor. p. 90 (1925); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929); YAMAZUTA, List Manch. Pl. p. 63 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1554 (1931)

Syn. *Lilium psudotigrinum*, CARRIÈRE, in Rev. Hort. t. 411 (1867); BAKER, in Journ. Linn. Soc. XIV. p. 248 (1874)

Lilium Leichtlinii, var. *Maximowiczii*, BAKER, in Gard. Chron. p. 1422 (1871); WILS., Lil. East. As. p. 71 (1925)

Nom. Jap. *Ko-oniyuri*

Leg. Ipse, Jul. 24, 1928.

Distr. Honsyū, Sikoku, Tanegasima, Amami-Ōsima, Korea, Manchuria.

Note. Occurs on the southern slopes of the island, in waste lands near the sea level.

Cardiocrinum, MAK., in Tokyo Bot. Mag. XXVII.

p. 124 (1913)

Syn. *Lilium*, sect. *Cardiocrinum*, ENDL., Gen. Pl. p. 141 (1836-40)

Cardiocrinum cordatum, MAK., in Tokyo Bot. Mag. XXVII. p. 124 (1913); MAK. et NEM., Fl. Jap. ed. 2. p. 154 (1931)

Syn. *Hemelocallis cordata*, THUNB., Fl. Jap. p. 143 (1784); GAERTN., Fruct. et Sem. Pl. II. p. 48, t. 179, f. 5 (1791)

Lilium cordifolium, THUNB., in Trans. Linn. Soc. II. p. 332 (1797); WILLD., Sp. Pl. II. p. 84 (1799); SPRENG., Syst. Veg. IV. p. 134 (1827); SIEB. et ZUCC., Fl. Jap. I. p. 33, tt. 13, 14 (1836); KUNTH, Enum. Pl. IV. p. 268 (1843); LEMAIRE, in Van. HOUTTE, Fl. de Serres, III. t. 216 (1847); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 157 (1867); FR. et SAV., Enum. Pl.

Jap. II. p. 12 (1876); ENGL., in ENGL. Bot. Jahrb. VI. p. 54 (1885); MATSUM., Ind. Pl. Jap. II. 1. p. 202 (1905); WILS., Lil. East. Asia p. 97 (1925) p.p.
Saussurea cordifolium, SALISB., in Trans. Linn. Soc. VIII. p. 11 (1807)

Lilium cordifolium, ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. p. 5 (1888) p.p.

Lilium cordifolium, BAKER., in Kew. Bull. p. 118 (1889) p.p.

Cardiocrinum cordifolium, MAK., in Tokyo Bot. Mag. XXVII. p. 125 (1913)

Nom. Jap. *Uba-yuri*

Leg. Ipse, Nagatadake, Jun. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. Occurs in the Pseudosasa-Owatarii Association.

Scilla, [LINN., Syst. ed. 1 (1735), Gen. Pl. ed. 1. p. 95 (1737)] et Sp. Pl. ed. 1. p. 308 (1753); ENDL., Gen. Pl. n. 1130 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 814 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 66 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 342 (1930)

Syn. *Stellaster*, HEIST, ex FABRICIUS, Enum. Pl. Hort. Helmstad ed. 2. p. 23 (1763)
Hyacinthoides, MEDIK., in Usteri, Ann. Bot. II. p. 9 (1791)

Epimenidion, RAF., Fl. Tellur. II. p. 13 (1836)

Sugillaria, SALISB., Gen. Pl. p. 18 (1866)

Scilla Thunbergii, MIY. et KUDO, in Trans. Sapp. Nat. Hist. Soc. VII. p. 3 (1921), et Fl. Hokk. & Sagh. III. p. 328 (1932); MAK. et NEM., Fl. Jap. ed. 2. p. 1565 (1931)

Syn. *Ornithogalum japonicum*, THUNB., Fl. Jap. p. 137 (1784)

Barnardia japonica, SCHULTES f., Syst. VII. p. 555 (1829); KUNTH, Enum. Pl. IV. p. 337 (1843); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 154 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 75 (1876)

Scilla japonica, (non THUNB.) BAK., in Journ. Linn. Soc. XIII. p. 233 (1872); KOM., Fl. Mansh. I. p. 465 (1901); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 127 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 212 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929)

Scilla chinensis, (non BENTH.) NAK., Fl. Kor. II. p. 263 (1911)

Nom. Jap. *Turubo*

Leg. Ipse, Nakama, Mart. 23, 1923.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Occurs by the roadside on waste lands.

Asparagus, [TOURN., ex LINN. Syst. ed. 1 (1735). Gen. Pl. ed. 1. p. 93 (1737)] et Sp. Pl. ed. 1. p. 313 (1753); ENDL., Gen. Pl. n. 1164 (1836-40); KUNTH, Enum. Pl. V. p. 57 (1850); BENTH. et HOOK. f., Gen. Pl. III. p. 765 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 77 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 362 (1930); LEMÉE, Dict. Gen. Pl. Phan. I. p. 413 (1929)

Syn. *Elide*, MEDIK., Phil. Bot. II. p. 71 (1791)

Hecatrix, SALISB., Gen. Pl. p. 66 (1866)

Asparagus cochinchinensis, MERR., in Philipp. Journ. Sc. XV. p. 230 (1919), Enum. Philipp. Pl. p. 206 (1922), et XI. p. 38 (1932); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929)

Syn. *Melanthium cochinchinensis*, LOUR., Fl. Cochinch. p. 216 (1790)

Asparagus lucidus, LINDL., Bot. Reg. Misc. p. 29. n. 36 (1844); KUNTH, Enum. Pl. V. p. 72 (1850); BENTH., Fl. Hongk. p. 371 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 151 (1867); BAK., in Journ. Linn. Soc. Bot. XIV. p. 605 (1875); FR. et SAV., Enum. Pl. Jap. II. p. 58 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 191 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 437 (1906); NAK., Fl. Kor. II. p. 242 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 1539 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 329 (1932)

Asparagus insularis, HANCE, in Ann. Soc. Nat. 5^{me} sér. V. p. 245 (1856)

Nom. Jap. *Kusasugi-kazura*

Leg. Ipse, Jun. 6, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, China, Philippines.

Note. Occurs in waste lands near the sea level and is distributed in Eastern Asia.

Majanthemum, (*Maianthemum*) WEB., in WIGGERS, Prim. Fl. Holsat. p. 14 (1780¹); ENDL., Gen. Pl. n. 1183a (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 770 (1833¹); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 79 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 367 (1930); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 262 (1932)

Syn. *Unifolium*, [MOEHR., Hort. Priv. p. 101 (1736¹)] ADANS., Fam. II. p. 54 (1763) *Valentia*, HEIST., ex FABRICIUS Enum. Pl. Hort. Helmstad ed. 2. p. 37 (1763) *Evallaria*, NECK., Elem. III. p. 189 (1790) *Bifolium*, GAERTN., MEY. et SCHERB. Fl. Wetterau. I. p. 209 (1799) *Monophyllum*, DELARB., Fl. d'Auvergne ed. 2. p. 615 (1800¹) *Mayanthemum*, DC., in LAM. et DC. Fl. Fr. ed. 3. III. p. 327 (1805) *Maia*, SALISB., Gen. Pl. p. 64 (1866)

Majanthemum nipponicum, NAK., in Tokyo Bot. Mag. XXXVIII. p. (181) (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929)

Syn. *Majanthemum bifolium*, (non DC.) DC., Fl. Fr. III. p. 177 (1805¹); KOM., Fl. Mansh. I. p. 473 (1901); NAK., Fl. Kor. II. p. 244 (1911); MAK. et NEM., Fl. Jap. ed. 2. p. 1557 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 333 (1932)

Maianthemum Convallaria, WIGG. et ROTH.; MATSUM., Ind. Pl. Jap. II. 1. p. 206 (1905)

Nom. Jap. *Maizurusô*

Leg. Ipse, Jun. 20, 1928.

Distr. Saghalien, Kuriles, Yezo, Honsyû, Sikoku, Kyûsyû, Korea, Manchuria.

Note. As lithophyte the plant is found in crevices of granite rocks in the Pseudosasa Owatarii Association, and has its southern limit in this island.

Disporum, SALISB., in Trans. Hort. Soc. I. p. 331 (1812); ENDL., Gen. Pl. n. 1082 (1836-40); KUNTH, Enum. Pl. IV. p. 206 (1843); BENTH. et HOOK. f., Gen. Pl. III. p. 831 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 80 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 368 (1930¹); LEMÉE, Dict. Gen. Pl. Phan. II. p. 691 (1930)

Syn. *Lethea*, NOV., in Verh. Batav. Gen. V. ed. 1. Art. IV. p. 2 (1790)

Drapiëzia, BL., Enum. Pl. Jav. p. 8 (1827)

Prosartes, D. DON, in Proc. Linn. Soc. I. p. 48 (1839), et Trans. Linn. Soc. XVIII. p. 531 (1841)

Disporum sessile, DON, Prodr. Fl. Nepal. p. 50 (1825); KUNTH, Enum. Pl. IV. p. 208 (1843); A. GRAY, in Narr. Perry. Exp. p. 321 (1856); BAK., in Journ. Linn. Soc. Bot. XIV. p. 589 (1875); FR. et SAV., Enum. Pl. Jap. II. p. 51 (1876); HANCE, in Journ. Bot. XXI. p. 358 (1883), et XXV. p. 13 (1887); MAXIM., in Mém. Biolog. XI. p. 860 (1883); ENGL., Bot. Jahrb. VI. p. 53 (1885); FR., in Bull. Soc. Bot. Fr. XLVI. p. 214 (1899); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 143 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 194 (1905); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 281 (1912); LOESN., Pfl.-welt. Kiautsch. Geb. p. 101 (1918); MORI, Enum. Pl. Cor. p. 87 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 54 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1544 (1931); MIY. et KUDO, Fl. Hokk. and Sagh. III. p. 335 (1932)

Nom. Jap. *Hōtyakusō*

Leg. Ipse, Jul. 14, 1922.

Distr. Saghalien, Yezo, Honsyū, Sikoku, Kyūsyū, Amami-Ōshima, Okinawa, Korea, China.

Note. Occurs as undergrowth in the lauri-aciculilivae.

Rhodea, ROTH, Nov. Pl. Sp. p. 196 (1821); ENDL., Gen. Pl. n. 1189 (1837); KUNTH, Enum. Pl. V. p. 320 (1850); BENTH. et HOOK. f., Gen. Pl. III. p. 772 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 82 (1887); KRAUSE, in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. p. 372 (1930)

Syn. *Titragyne*, SALISB., Gen. Pl. p. 9 (1866)

Rhodea japonica, ROTH, Nov. Pl. Sp. p. 197 (1821); KUNTH, Enum. Pl. V. p. 321 (1850); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 144 (1867); BAK., in Journ. Linn. Soc. Bot. XIV. p. 582 (1875); FR. et SAV., Enum. Pl. Jap. I. p. 86 (1876); FR., in Bull. Soc. Bot. Fr. XLIII. p. 40 (1896); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 115 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 211 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1564 (1931)

Syn. *Orontium japonicum*, THUNB., Fl. Jap. p. 144 (1784); Bot. Mag. t. 898 (1806)

Nom. Jap. *Omoto*

Leg. Ipse, Nagata, Mart. 22, 1923.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, China.

Note. The species is found in the lauri-aciculilivae and is not yet reported in Okinawa and Taiwan.

Paris, [RUPP., ex LINN. Syst. ed. 1 (1735)] et Sp. Pl. ed. 1. p. 367 (1753); ENDL., Gen. Pl. n. 1176 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 833 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 83 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 374 (1930)

Paris tetraphylla, A. GRAY, Bot. Jap. p. 412 (1858); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 147 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 57 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 209 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1560 (1931); MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 342 (1932)

var. yakusimenais, MASAMUNE, var. nov.

Syn. *Paris tetraphylla*, MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929)

Herba minora quam typica, ca. 4-16 cm alta.

Nom. Jap. *Yakusimatukubanesô*

Leg. Ipse, Yaegadake, Jun. 20, 1928.

Distr. Endemica, (Sp.) Yezo, Honsyû, Sikoku, Kyûsyû, Manchuria.

Note. Occurs as undergrowth in the lauri-aciculilivae.

Liriope, LOUR., Fl. Cochinch. p. 200 (1790);

BENTH. et HOOK. f., Gen. Pl. III. p. 678 (1833); ENGL., in ENGL. u. PRANT, Nat. Pfl.-fam. II. v. p. 85 (1837); KRAUSE, in id 2-auf. B. 15a. p. 376 (1930)

Syn. *Mondo*, ADANS., Fam. II. p. 496 (1763)

Ophiopogon, KUNTH, Enum. Pl. V. p. 297 (1850)

Liriope cernua, (THUNB. MASAMUNE, comb. nov.

Syn. *Convallaria cernua*, THUNB., in Mus. Upsal. XII. p. 97 (1792)

Ophiopogon spicatus, var. *minor*, MAXIM., in Mél. Biolog. VII. p. 324 (1870);

FR. et SAV., Enum. Pl. Jap. II. p. 84 (1876)

Liriope graminifolia, var. *minor*, BAK., in Journ. Linn. Soc. XVII. p. 500 (1879)

Liriope minor, MAK., in Tokyo Bot. Mag. VII. p. 323 (1893); MATSUM., Ind.

Pl. Jap. II. 1. p. 205 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1556 (1931);

MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 345 (1932)

Mondo cernua, KOIDZ., in Tokyo Bot. Mag. XL. p. 332 1926; MASAMUNE,

Prel. Rep. Veg. Yak. p. 55 (1929)

Nom. Jap. *Hime-yaburan*

Leg. Ipse, Kurio, Mart. 23, 1923.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Okinawa, Taiwan.

Note. Occurs as undergrowth in the laurisilvae.

Ophiopogon, KER., in Bot. Mag. t. 1063 (1807);

ENDL., Gen. Pl. n. 1192 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 678 (1833);

ENGL., in ENGL. u. PRANT, Nat. Pfl.-fam. II. v. p. 85 (1837)

Syn. *Mondo*, ADANSON, Fam. Pl. II. p. 496 (1763); KRAUSE, in ENGL. u. PRANT, Nat. Pfl.-fam. 2-auf. B. 15a. p. 377 (1930)

Flueggea, L. C. RICH., in SCHRAD. Neu. Journ. Bot. II. p. 8. t. 1 (1807); KUNTH, Enum. Pl. V. p. 301 (1850)

Sloteria, (*Slatcria* STEUD., Nom. ed. 2. II. p. 597 (1841)

Ophiopogon jaburan, LODD., Bot. Cab. t. 1876 (1818-24); MAXIM., in Mél. Biol. VII. p. 324 (1870); FR. et SAV., Enum. Pl. Jap. II. p. 84 (1876); Engl. Bot. Jahrb. VI.

p. 54 (1885); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 77 (1903);

MATSUM., Ind. Pl. Jap. II. 1. p. 207 (1905); MORI, Enum. Pl. Cor. p. 92 (1922);

MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1558 (1931)

Syn. *Convallaria japonica*, var. *major*, THUNB., Fl. Jap. p. 139 (1784)

Slatcria jaburan, SIEB., in Vegh. Batav. Gen. XII. p. 15 (1830)

Flueggea jaburan, KUNTH, Enum. Pl. V. p. 303 (1850); BAKER, in Journ. Linn. Soc. Bot. XVII. p. 502 (1879)

Nom. Jap. *Nosiran*

Leg. Ipse, Jul. 21, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Korea.

Note. Occurs as epiphyte or undergrowth in the laurisilvae.

Ophiopogon japonicus, KER., in Bot. Mag. t. 1063 (1808); MAXIM., in Mém. Biolog. VII. p. 325 (1870); FR. et SAV., Enum. Pl. Jap. II. p. 84 (1876); PALIB., Consp. Fl. Kor. III. p. 5 (1901); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 78 (1903); MATSUM., Ind. Jap. Pl. II. 1. p. 203 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 426 (1906); NAK., Fl. Kor. II. p. 240 (1911); DUNN et TUTCH., Fl. Hongk. & Kwang. p. 274 (1912); MASAMUNE, Prel. Rep. Veg. Yak. p. 55 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1558 (1931)

Syn. *Convallaria japonica*, LINN. f., Supp. p. 204 (1784)

Convallaria japonica, var. *minor*, THUNB., Fl. Jap. p. 139 (1784)

Fluggea japonica, RICH., in Schrad. New Journ. II. 1. p. 9. t. 1a (1807); KUNTH, Enum. Pl. V. p. 302 (1850); GRAY, in Narr. Perr. Exp. p. 322 (1857); BAKER, in Journ. Linn. Soc. XVII. p. 50 (1879)

Slateria japonica, DESV., in Verg. Batav. Gen. XII. p. 15 (1830)

Ophiopogon japonicus, var. *genuinus*, MAXIM., in Bull. Acad. St. Peter. XV. p. 87 (1871), et in Mém. Biolog. VII. p. 327 (1870)

Ophiopogon Wallichianus, HOOK. f., Fl. Brit. Ind. VI. p. 268 (1892)

Nom. Jap. *Zyanohige*

Leg. Ipse, Aug. 31, 1931.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, Taiwan, Korea,

Note. Occurs in waste land and by the roadside near the sea level.

Aletris, LINN., Sp. Pl. ed. 1. p. 319 (1753); ENDL., Gen. Pl. n. 1259 1836-40; BENTH. et HOOK. f., Gen. Pl. III. p. 677 (1883); ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 85 (1887); KRAUSE, in id. 2-auf. B. 15a. p. 378 (1930); LEMEE, Dict. Gen. Pl. Phan. I. p. 146 (1929)

Aletris spicata, FR., in Journ. de Bot. X. p. 199 (1896); MASAMUNE, Prel. Rep. Veg. Yak. p. 53 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1534 (1931)

Syn. *Hypoxis spicata*, THUNB., Fl. Jap. p. 136 (1784)

Aletris farinosa, THUNB., in Trans. Linn. Soc. II. p. 334 (1794)

Aletris japonica, LAMB., in Trans. Linn. Soc. X. p. 407 (1811); A. GRAY, Narr. Perrey, Exp. p. 320 (1856), et in Mem. Amer. Acad. New sér. VI. p. 417

| Regions | Names of Plants |
|---------|-----------------------------------|
| | Philippines |
| | Bonins |
| | Taiwan |
| | Okinawa |
| | Amami-Ōshima |
| | Tanegasima |
| | Kyûsyû Prop. |
| | Sikoku |
| | Honsyû |
| | Korea |
| | Yezo & Southern Kuriles |
| | Saghalien |
| | Northern Kuriles & Kamchatka |
| | Manchuria, Amur & Ussuri |
| | China |
| | Tofieldia Yosiiana, MAK. |
| | Chionographis japonica, MAXIM. |
| | var. vakusimensis. MASAM. |

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China, Philippines.

Note. Occurs in waste lands.

In the *Liliaceae* there are eight elements which have their southern limit in this island; thus the flora of the island is closely related to the northern lands if we consider the distribution of the plants of this family.

Amaryllidaceae

Amaryllidaceae, LINDL., Nat. Syst. ed. 2. p. 328 (1836)

Syn. *Amaryllideae*, R. BR., Prodr. Fl. Nov. Holl. p. 296 1810

Leucojaceae, BATSCH., Tabula Affinitatum, Regni Veg. p. 147 (1802)

Crinum, [LINN., Gen. Pl. ed. 1. p. 97 (1737)]

et Sp. Pl. ed. 1. p. 291 (1753); ENDL., Gen. Pl. n. 1276 1836-40; BENTH. et HOOK. f., Gen. Pl. III. p. 726 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 108 (1887); PAX u. HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 409 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 371 (1930)

Syn. *Tanghekolli*, ADANS., Fam. II. p. 57 (1763)

Scandianus, RAF., Atlant. Journ. p. 164 (1833)

Liriamus, RAF., Fl. Tellur. IV. p. 23 (1836)

Crinopsis, HERB., Amaryll. p. 270 (1837)

Pancratis-Crinum, HERB. ex STEUD., Nomenc. ed. 2. II. p. 250 1841)

Stenolirion, BAK., in Hook. Ic. Pl. XXV. t. 2493 (1896)

Crinum asiaticum, LINN. var. *japonicum*, BAK., Handb. Amaryll. p. 75 (1838); MATSUM.,

Ind. Pl. Jap. II. 1. p. 219 (1905); MORI, Enum. Pl. Cor. p. 96 (1922); MASAMUNE,

Prel. Rep. Veg. Yak. p. 56 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1530 (1931)

Syn. *Crinum latifolium*, THUNB., Fl. Jap. p. 131 (1784)

Crinum asiaticum, LINN. var. *declinatum*, KUNTH; MIQ., in Ann. Mus. Bot.

Lugd. Bat. II. p. 139 (1865); FR. et SAV., Enum. Pl. Jap. II. p. 45 (1876);

MAXIM., in Engl. Bot. Jahrb. VI. p. 77 (1885)

Nom. Jap. *Hamaomoto*

Leg. Ipse, Jul. 20, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea.

Note. The psammophyte is found on the littoral beaches.

Lycoris, HERB., App. Bot. Reg. p. 20 (1821); ENDL.,

Gen. Pl. n. 1273 h. (1836-40); KUNTH, Enum. Pl. II. p. 544 (1850); BENTH. et

HOOK. f., Gen. Pl. III. p. 727 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II.

v. p. 113 (1887); PAX u. HOFFM., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B.

15a. p. 416 (1930)

Lycoris radiata, HERB., App. Bot. Reg. p. 20 (1821); KUNTH, Enum. Pl. V. p. 546 (1850);

HANCE, in Journ. Bot. XXI. p. 262 (1874); FR. et SAV., Enum. Pl. Jap. II. p. 44

(1876); MAXIM., in Engl. Bot. Jahrb. VI. p. 78 (1885); BAK., Handb. Amaryll.

p. 40 (1888); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 89 (1903); MASA-

MUNE, Prel. Rep. Veg. Yak. p. 56 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1582 (1931)

Syn. *Amaryllis radiata*, L'HERIT., Sert. Angl. p. 16 (1786)

Amaryllis sarniensis, (non LINN.) THUNB., Fl. Jap. p. 131 (1784); LOUR., Fl. Cochinch. p. 200 (1790)

Nerine japonica, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 139 (1855); FR. et SAV., Enum. Pl. Jap. II. p. 44 (1876)

Nom. Jap. *Higanbana*

Leg. Ipse, Ambô, Sept. 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Okinawa, China.

Note. The species is found on cultivated lands near the sea level.

Curculigo, GAERTN., Fruct. I. p. 63, t. 16 (1788);

ENDL., Gen. Pl. n. 1263 1836-40; BENTH. et HOOK. f., Gen. Pl. III. p. 717 (1883);

PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 121 1887, PAX u. HOFFM., in id. 2.-auf. B. 15a. p. 426 1930; LEMÉE, Dict. Gen. Pl. Phan. II. p. 417 (1930)

Syn. *Fabricia*, THUNB., in J. C. Fabricius, Reise nach Norweg. p. 23 (1779)

Forbesia, ECKL., Verz. Pflsammlg. p. 4 (1827)

Aurota, RAF., Fl. Tellur. III. p. 61 (1836)

Curculigo orchioides, GAERTN., Fruct. I. p. 63, f. 11 1788; DRYAND, in AIT. Hort. Kew. ed. 2. II. p. 253 1811; BAK., in Journ. Linn. Soc. XVII. p. 124 (1878); MAK., Ill. Fl. Jap. I. n. 10. Pl. LXII. 1891; WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 87 1903; MATSUM., Ind. Pl. Jap. II. 1. p. 220 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 56 1929; MAK. et NEM., Fl. Jap. ed. 2. p. 1530 (1931)

Syn. *Curculigo ensifolia*, R. BR., Prodr. p. 290 1810; MAXIM., in Engl. Bot. Jahrb. VI. p. 75 1885

Curculigo orchioides, GAERTN. var. *minor*, BENTH., Fl. Hongk. p. 366 (1861); Bot. Mag. t. 1076 (1908)

Curculigo malabrica, WRIGHT, Ic. Pl. Ind. Or. t. 2043 1853

Hypoxis orchioides, KURZ., in Ann. Mus. Bot. Lugd. Bat. IV. p. 177 (1868)

Nom. Jap. *Kinbaizasa*

Leg. Ipse, Jul. 10, 1928.

Distr. Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, China, India, Australia.

Note. The species is found on waste land or in sunny places.

Hypoxis, LINN., Syst. ed. 10. p. 985 (1759); ENDL.,

Gen. Pl. n. 1264 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 717 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 121 1887; PAX u. HOFFM., in id. 2.-auf. B. 15a. p. 426 (1930); LEMÉE, Dict. Gen. Pl. Phan. III. p. 727 (1931)

Hypoxis aurea, LOUR., Fl. Cochinch. p. 200 (1790); HANCE, in Journ. Bot. VIII. p. 276 (1870), et XVI. p. 111 (1878); BAK., in Journ. Linn. Soc. Bot. XVII. p. 108 (1877); MAXIM., in Engl. Bot. Jahrb. VI. p. 75 (1885); MAK., Ill. Fl. Jap. I. n. 10. Pl. LXIII. (1891); HOOK. f., Fl. Brit. Ind. VI. p. 277 1894; FR., in Bull. Soc. Bot. Franc. XLVI. p. 214 (1901); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 86 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 220 (1905); MASAMUNE, Prel. Rep. Veg. Yak. p. 56 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1582 (1931)

Syn. *Hypoxis minor*, DON, Prodr. Fl. Nepal. p. 53 (1825); ROYLE, Ill. Bot. Himal. p. 376, t. 91, f. 3 (1839)

Hypoxis Franquevillei, MIQ., Fl. Ind. Bat. III. p. 586 (1857)

Nom. Jap. *Kokinbaizasa*

Leg. Ipse, Aug. 12, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China, India, Java.

Note. Occurs in grassy lands near the sea level.

| Names of Plants | Regions | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|--------|------------------------------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ôsima | Tanegasima | Kyûsyû Prop. | Kyûsyû | Sikoku | Honsyû | Korea |
| | | | | | | | | | | | Yezo & Southern Kuriles |
| | | | | | | | | | | | Saghalien |
| | | | | | | | | | | | Northern Kuriles & Kamchatka |
| | | | | | | | | | | | Manchuria, Amur & Ussuri |
| | | | | | | | | | | | China |
| <i>Crinum asiaticum</i> , LINN. var. <i>japonicum</i> , BAK. | | | | + | + | + | + | + | + | + | |
| <i>Lycoris radiata</i> , HERB | | | | + | | + | + | + | + | + | |
| <i>Curculigo orchioideis</i> , GAERTN. | | | + | + | + | + | + | + | + | | |
| <i>Hypoxis aurea</i> , LOUR. | | | + | + | + | + | + | + | + | | |

The flora of this family in the island shows no special phytogeographical relation either with the northern or the southern lands.

Dioscoreaceae

Dioscoreaceae, LINDL., Nat. Syst. ed. 2. p. 359 (1836)

Syn. *Dioscoreae*, R. BR., Prodr. p. 294 (1810); ENDL., Gen. Pl. p. 157 (1836-40)

Dioscorineae, KUNTH, in Abh. Akad. Wiss. Berlin. 1848. p. 70 (1850)

Dioscorea, [PLUM., ex LINN. Gen. ed. 1. p. 306 (1737)] et Sp. Pl. ed. 1. p. 1032 (1753); ENDL., Gen. Pl. n. 1201 (1836-40); KUNTH, Enum. Pl. V. p. 325 (1850); BENTH. et HOOK. f., Gen. Pl. III. p. 742 (1883); PAX, in ENGL. u. PRANT. Nat. Pfl.-fam. II. v. p. 133 (1887); KUNTH, in ENGL. Pfl.-reich. IV. 43. (Heft 87) p. 45 (1924), et in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 445 (1930); LEMÉE, Dict. Gen. Pl. Phan. II. p. 641 (1930)

Syn. *Ricophora*, MILL., Gard. Dict. ed. 6. App. 175 (1752)

Ubium, J. F. GMEL., Syst. II. p. 839 (1791)

Discorea, MIQ., in Fl. Ind. Bat. III. p. 572 (1859)

Discoridia, ST.-LAG., in Ann. Soc. Bot. Lyon. VIII. p. 175 (1881)

Dioscorea bulbifera, LINN., Sp. Pl. ed. 1. p. 1033 (1753); LAM., Encycl. III. p. 232 (1789); R. BR., Prodr. I. p. 294 (1810); BL., Enum. Pl. Jav. I. p. 1688 (1830); WIGHT, Ic. Pl. Ind. Or. III. t. 878 (1840-56); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 276 (1912); PRAIN et BURKILL, in Journ. Asiat. Soc. Bengal. X. p. 26 (1914); MERR., Interp. Rumbph. Herb. Amboin. p. 146 (1917), et Enum. Phil. Pl. I. p. 215 (1922); KOORDR., Excursionfl. Jav. IV. p. 264 f. 501 (1923); KUNTH, in ENGL. Pfl.-reich. IV. 43 (Heft 87) p. 88 (1924); YAMAMOTO, Supp. Ic. Pl. Formos. III. p. 6 (1927); MASAMUNE, Prel. Rep. Veg. Yak. p. 56 (1929)

Syn. *Dioscorea sativa*, THUNB., Fl. Jap. p. 151 (1784); KUNTH, Enum. Pl. V. p. 340 1850¹; BENTH., Fl. Hongk. p. 368 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 159 (1867, p.p.); HILLEBR., Fl. Hawai. Isl. p. 438 (1888); HOOK. f., Fl. Brit. Ind. VI. p. 295 (1892); TRIMEN, Handb. Fl. Ceylon IV. p. 278 (1898); HAY., Ic. Pl. Formos. X. p. 44. f. 24 (1921); MORI, Enum. Pl. Cor. p. 97 (1922)

Dioscorea eburnea, LOUR., Fl. Cochinch. ed. WILLD. II. p. 767 (1793)

Dioscorea sativa, LINN. f. *domestica*, MAK., in IINUMA Somoku Dzusetsu ed. 3. IV. t. 58 (1912)

Dioscorea bulbifera, LINN. f. *spontanea*, MAK. MAK. et NEM., Fl. Jap. ed. 2. p. 1585 1931

Nom. Jap. *Nigagasyū*

Leg. Ipse, Miyanoura, Aug. 1927.

Distr. Honsyū, Sikoku, Kyūsyū, Okinawa, Taiwan, Korea, China, India, Manila, Philippines, Himalaya.

Note. Occurs on the forest edges of the laurisilvae or in the lauri-aciculisilvae.

Dioscorea japonica, THUNB., Fl. Jap. p. 151 1784; KUNTH, Enum. Pl. V. p. 388 1850; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 159 1867; MAK., III. Fl. Jap. I. Pl. XXII. 1889; MAXIM., in Eng. Bot. Jahrb. VI. p. 52 (1885); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 92 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 223 1905; MATSUM. et HAY., Enum. Pl. Formos. p. 433 1906; MORI, Enum. Pl. Cor. p. 97 1922; KUNTH, in Engl. Pfl.-reich. IV. 43 (Heft 87) p. 262 1924; MASAMUNE, Prel. Rep. Veg. Yak. p. 56 (1929); YAMAZUTA, List Manch. Pl. p. 69 1930; MAK. et NEM., Fl. Jap. ed. 2. p. 1586 1931

Syn. *Dioscorea Goeringiana*, KUNTH, Enum. Pl. V. p. 402 1850

Nom. Jap. *Yamanoimo*

Leg. Ipse, Jul. 6, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Occurs in sunny spots in the laurisilvae or in the lauri-aciculisilvae.

Dioscorea quinqueloba, THUNB., Fl. Jap. p. 150 (1784); KUNTH, Enum. Pl. V. p. 350 (1850¹); MAXIM., Prim. Fl. Amur. p. 478 (1859¹); MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 159 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 46 (1876); MAK., III. Fl. Jap. I. Pl. XXVI (1889); KOM., Fl. Mansh. I. p. 487 (1901); WRIGHT, in FORB. et HEMSL. Ind. Fl. Sin. III. p. 92 (1903); PRAIN et BURKILL, in Journ. Asiat. Soc. Bengal. LXXIII. Supp. 9, X. p. 14 (1904¹); MORI, Enum. Pl. Cor. p. 97 (1922); KUNTH, in ENGL. Pfl.-reich. IV. 43 (Heft 87) p. 179 (1924); MASAMUNE, Prel. Rep. Veg. Yak. p. 56 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1587 (1931)

Nom. Jap. *Kaede-dokoro*

Leg. Ipse, Aug. 13, 1928.

Distr. Honsyū, Sikoku, Kyūsyū, Korea, Manchuria, China.

| Names of Plants | Regions | | | | | | | | | | | | | | |
|---|-------------|--------|--------|---------|-------------|------------|--------------|--------|--------|-------|-------------------------|-----------|-------------------------------|--------------------------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Osima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka | Manchuria, Amur & Ussuri | China |
| Dioscorea bulbifera, LINN. | + | | + | + | | | + | + | + | + | | | | | + |
| Dioscorea japonica, THUNB. | | | + | + | + | + | + | + | + | + | | | | + | + |
| Dioscorea quinqueloba, THUNB. | | | | | | | + | + | + | + | | | | + | + |
| Dioscorea tenuipes, FR. et SAV. | | | | + | | + | + | + | + | | | | | | |
| Dioscorea tokoro, MAK. | | | | | + | | + | + | + | + | + | | | | |
| Total | 5 | 1 | 2 | 3 | 3 | 2 | 5 | 5 | 5 | 4 | 1 | | | 2 | 3 |
| Percentage | 20 | 40 | 60 | 60 | 60 | 40 | 100 | 100 | 100 | 80 | 20 | | | 40 | 60 |

(Southern elements 4)

(Northern elements 5)

(1905'; MATSUM. et HAY., Enum. Pl. Formos. p. 428 (1906); DUNN et TUTCH., Fl. Kwang. & Hongk. p. 274 (1912); MIURA, List Pl. Manch. & Mong. p. 86 (1925)

Pardanthus chinensis, KER., in Kon. Ann. Bot. I. p. 246 (1805); BENTH., Fl. Hongk. p. 365 (1861'); HANCE, in Journ. Bot. XII. p. 262 (1874)

Belamcanda chinensis, LEMAN., in Red. Lil. t. 121 (1807); BAK., in Journ. Linn. Soc. Bot. XVI. p. 113 (1877); HOOK. f., Fl. Brit. Ind. VI. p. 277 (1894)

Nom. Jap. *Hiôgi*

Leg. Ipse, ca. Onoaida.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. The species is found in waste or sunny places, spreading its fanshaped leaf cluster with its flower stalk against the sun.

There is only one widely distributed species of this family in the island and I can not deduce from it any data as to the determining of the phytogeographical position of the island.

Musaceae

Musaceae, J. ST.-HILL., Expos. Fam. I. p. 151 (1805)

Syn. *Musae*, JUSS., Gen. Pl. p. 61 (1789)

Scitaminaeae, TRIB., *Musaeae*, BENTH., in BENTH. et HOOK. f. Gen. Pl. III. p. 636 1883

Musa, [LINN., Hort. Cliff. p. 2 1736, et Gen. Pl. ed. 1. p. 315 1737] et Sp. Pl. ed. 1. p. 1043 (1753; ENSETÉ, Bruce Trav. V. 1790; ENDL., Gen. Pl. n. 1648 1836-40; BENTH. et HOOK. f., Gen. Pl. III. p. 655 1883; PETERSEN., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 7 1888; SCHUM., in ENGL. Pfl.-reich. IV. 45 Heft 1) p. 13 (1900; WINKL., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 538 (1930; LEMÉE, Dict. Gen. Pl. Phan. IV. p. 594 (1932)

Syn. *Muza*, STOKES, Bot. Mag. Med. I. p. 472 (1812)

Mnasium, STACKH., Extr. Bruces Trav. Abyss. p. 18. t. 2 (1815

Musa Textilis, NEES, in Anal. Cienc. Nat. IV. p. 123 1801; BAK., in Ann. Bot. VII. p. 211 1893; SCHUM., in ENGL. Pfl.-reich. IV. 45 (Heft 1) p. 19 (1900); MERR., Enum. Philip. Pl. I. p. 227 (1922); MAK. et NEM., Fl. Jap. ed. 2, p. 1597 (1931)

Syn. *Musa mindanaensis*, RUMPH.; MIQ. Fl. Ind. Bat. III. p. 588 (1859,

var. *liukiensis*, MASAMUNE, nom. nov.

Syn. *Musa sapientum*, LINN. var. *liukiensis*, MATSUM., Tokyo Bot. Mag. XI. p. 69 (1897)

Musa liukiensis, MAK., in Tokyo Bot. Mag. XXVI. p. 180 (1912); MAK. et NEM., Fl. Jap. ed. 2. p. 1596 (1931)

Nom. Jap. *Ito-basyô*

Distr. Amami-Ôsima, Okinawa.

Note. The plant occurs in low moist lands; I doubt whether this plant has not been introduced from outside.

| Name of Plant | Regions | | | | | | | | | |
|--|-------------|--------|--------|---------|--------------|---------|------------|--------------|--------|-------|
| | Philippines | Bonins | Taiwan | Okinawa | Amami-Ōshima | Ryūkyūs | Tanegasima | Kyūsyū Prop. | Kyūsyū | China |
| Musa Textilis, NEES, var. liukiensis, MASAMUNE | | | | + | + | | | | | |

There is only one representative of the *Musaceae* in Yakusima, which is closely related to those of the southern regions.

Zingiberaceae

Zingiberaceae, L. C. RICH., Anal. Fruit. p. 36 1803

Zingiber, ADANS., Fam. II. p. 66 1763 ; ROXB., Coromand. Pl. III. t. 253 1819 ; ROSCOE, Monandr. Pl. t. 83 1828 ; BL., Enum. Pl. Jav. I. p. 41 1827 ; WIGHT, Ic. t. 2034 1853 ; Van HALL., Observ. Zingib. Lugd. Bat. 1858 ; HORAN, Monogr. p. 27 1862 ; BENTH. et HOOK. f., Gen. Pl. III. p. 646 1883 ; PETERS., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 25 1838 ; SCHUM., in Engl. Pfl.-reich. IV. 46 Heft 20 p. 165 1903 ; LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 586 1930

Syn. *Lampujang*, KOEN., in Retz. Observ. III. p. 62 1783

Thumung, KOEN., in Retz. Observ. III. p. 62 1783

Jaegera, GISEKE, Praele et Linn. p. 203 1792

Cassumunar, COLLA, Nov. Scitam. Gen. Comm. Taurin. 1. t. 1 1830

Zerumbet, non WENDL. LESTIBOUDOIS, in Ann. Sc. Nat. 2. sér. XV. p. 329 1841)

Zingiber mioga, ROSC., in Trans. Linn. Soc. VIII. p. 348 1807 ; MIQ., in Ann. Mus. Bot. Lugd. Bat. III. p. 140 (1867 ; FR. et SAV., Enum. Pl. Jap. II. p. 20 1876 ; MATSUM., Ind. Jap. II. 1. p. 233 1905 ; MORI, Enum. Pl. Cor. p. 99 1922 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 57 1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1604 (1931)

Syn. *Amomum mioga*, THUNB., Fl. Jap. p. 14 1784)

Nom. Jap. *Myōga*

Leg. Ipse, Kosedā, Jul. 12, 1928.

Distr. Kyūsyū, Tanegasima, Amami-Ōshima, Korea.

Note. The species is found as undergrowth in the laurisilvae at low altitudes. It is distributed southward as far as Amami-Ōshima and not in Okinawa and Taiwan ;

in the latter island, however, it is replaced by *Z. Kawagooi*. From this point of view Amami-Ōsima and other districts which have this species and Yakusima may be included in one floristic region so far as this species alone is concerned.

- Alpinia**, (non LINN.) sens. strict. ROXB., Fl. Ind. I. p. 59 (1832); ENDL., Gen. Pl. n. 1632 (1836-40) p.p.; BENTH. et HOOK., Gen. III. p. 648 (1883); PETERS, in ENGL. u. PRANT. Pfl.-fam. II. vi. p. 23 (1888); LOESN., in ENGL. u. PRANT. Nat. Pfl.-fam. 2-auf. B. 15a. p. 611 (1930); LEMÉE, Dict. Gen. Pl. Phan. I. p. 172 (1929)
- Syn.* *Alughas*, [LINN., Fl. Zeyl. p. 207 (1747)]
Galanga, [RUMPH., Herb. Amb. V. p. 143 (1747)]
Languas, KOENIG, in Retz. Observ. III. p. 64 (1783)
Catimbium, JUSS., Gen. Pl. p. 62 (1789)
Heritiera, RETZ., Observ. VI. p. 17, t. 1 (1791)

Alpinia chinensis, ROSC., in Trans. Linn. Soc. VIII. p. 346 (1807; BENTH., Fl. Hongk. p. 349 (1861); SCHUM., in ENGL. u. PRANT. Nat. Pfl.-fam. IV. 46 (Heft 20 p. 317 1903; MATSUM., Ind. Pl. Jap. II. 1. p. 231 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1598 (1931)

Syn. *Languas Cumingii*, non MERR.) MASAMUNE, Prel. Rep. Veg. Yak. p. 57 (1929)
Languas chinensis, ROSC.) MERR., in Lingn. Agr. Rev. I. 2. p. 64 (1923, et Enum. Hainan Pl. p. 51 1927)

Nom. Jap. *Aono-kumatakeran*

Lcg. Ipse, Jul. 15, 1922.

Distr. Honsyū, Sikoku, Kyūsyū, Tanegasima, Amami-Ōsima, Okinawa, Bonins, China.

Note. Occurs as undergrowth in the laurisilvae; common in the southern part of Japan.

Alpinia satsumensis, GAGN., in Bull. Soc. Bot. Fr. Ser. 4. II. p. 247 1903; MAK. et NEM., Fl. Jap. ed. 2. p. 1601 1931

| Names of Plants | Regions | | | | | | | | | | | |
|--|-----------------------|--------|---------|-------------|------------|--------------|--------|--------|-------|-------------------------|-----------|---|
| | Philippines Bonins | Taiwan | Okinawa | Amami-Ōsima | Tanegasima | Kyūsyū Prop. | Sikoku | Honsyū | Korea | Yezo & Southern Kuriles | Saghalien | Northern Kuriles & Kamtchatka Manchuria, Amur & Ussuri |
| <i>Zingiber mioga</i> , ROSC. | | | | + | + | + | + | + | + | | | |
| <i>Alpinia chinensis</i> , ROSC. | + | | + | + | + | + | + | + | | | | + |
| <i>Alpinia satsumensis</i> , GAGN. | | | | | | + | | | | | | |

Nom. Jap. *Satuma-kumatakeran*

Leg. Ipse, Aug. 5, 1925.

Distr. Kyûsyû.

Note. Grows as undergrowth in the laurisilvae.

As the above table shows, the flora of the island shows a slight resemblance with that of northern lands so far as the distribution of this family is concerned.

Burmanniaceae

Burmanniaceae, BL., Enum. Pl. I. p. 27 (1827

Burmannia, [LINN., Syst. ed. 1. (1735.) et Sp. Pl. ed. 1. p. 287 (1753 ; ENDL., Gen. Pl. n. 1219 1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 457 (1883 ; ENGL., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 50 (1889 ; LEMÉE, Dict. Gen. Pl. Phan. I. p. 721 (1929

Syn. *Vogelia*, J. F. GMEL., Syst. p. 107 (1791

Tripterella, L. C. RICH., in MICHX. Fl. Bor. Amer. I. p. 19. t. 3 (1803

Maburnia, THOU., Gen. Nov. Madagascar. p. 4 1806

Gonyanthes, BL., Catal. Gew. Buit. p. 19 (1823

Gonyanthes, NEES, in Ann. Sc. Nat. III. p. 369 1834

Tetraptera, MIERS., in Lindl. Veg. Kingd. p. 172 (1847

Cryptonema, TURCZ., in Bull. Soc. Nat. Mosco XXI. p. 1. p. 590 (1848

Nephrocodium, BENTH. et HOOK. f., Gen. Pl. III. p. 457 1883

Burmannia cryptopetala, MAK., in Tokyo Bot. Mag. XXVII. p. 3 (1913 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 57 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1607 (1931

Nom. Jap. *Siro-syakuzyô*

Leg. Ipse, Nakama, Aug. 6, 1928.

Distr. Honsyû, Kyûsyû.

Note. Occurs as undergrowth in the laurisilvae or in the lauri-aciculisilvae.

Burmannia japonica, MAXIM.; MAK., Ill. Fl. Jap. I. t. 35 1891 , et in Tokyo Bot. Mag. XVII. p. 6 1903 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 58 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1607 (1931)

Syn. *Burmannia* sp. MAK., Ill. Fl. Jap. I. Pl. XXXV. 1890

Burmannia capitata, MAK., in Tokyo Bot. Mag. IV. p. 23 (1890)

Nom. Jap. *Hinano-syakuzyô*

Leg. Ipse, Aug. 8, 1924.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. The species grows as undergrowth on humus ground in the laurisilvae or in the lauri-aciculisilvae, and has its southern limit in this island.

Burmannia Itoana, MAK., in Tokyo Bot. Mag. XXVII. p. 1 (1913 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 57 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1607 (1931

Syn. *Burmannia coelestis*, (non DON) MATSUM., Ind. Pl. Jap. II. 1. p. 234 (1905.

Nom. Jap. *Ruri-syakuzyô*

Leg. Ipse, ca. Kurio, Jul. 1928.

Distr. Amami-Ôsima, Okinawa.

Syn. *Gymnadenia lepida*, RCHB. f., Ot. Bot. Hamb. p. 51 (1878) ; ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 53 (1903) ; MATSUM., Ind. Pl. Jap. II. 1. p. 249 (1905)

Cynosorchis japonica, KRANZL., Gen. & Sp. Orch. I. p. 487 (1898)

Nom. Jap. *Ryūkyū-tidori*

Leg. Ipse, Kurio, Mart. 22, 1923.

Distr. Kyūsyū, Amami-Ōsima, Okinawa.

Note. The species abounds on the southern side of the island and is found in the lowlands and grassy lands spread among cultivated lands and in waste lands.

Herminium, [LINN., Syst. ed. 1. 1735] R. BR., in AIT. Hort. Kew ed. 2. p. 191 1813 ; ENDL., Gen. Pl. n. 1524 1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 622 1883 ; PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 91 1889 ; SCHL., Orchid. p. 63 1915 ; LEMÉE, Dict. Gen. Pl. Phan. III. p. 543 1931)

Syn. *Aopla*, LINDL., Bot. Reg. t. 1701 1835)

Herminium angustifolium, BENTH. et HOOK. f., Gen. Pl. III. p. 622 1883 ; HOOK. f., Fl. Brit. Ind. VI. p. 129 1830 ; ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 50 1903 ; MATSUM. et HAY., Enum. Pl. Formos. p. 418 1906 ; SCHL., Orchid. Sino-Jap. Prodr. p. 100 1919 ; MERR., Enum. Philip. Pl. I. p. 255 1922 ; YAMAZUTA, List Manch. Pl. p. 74 1930 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1652 1931 ; MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 359 1932

Syn. *Aceras angustifolia*, LINDL., Gen. & Sp. Orch. p. 232 1835 ; WIGHT, Ic. V. 11. p. 1691 (1840-56)

Platanthera angustifolia, RCHB. f., Ot. Bot. Hamb. p. 39 (1878) ; MATSUM., Ind. Pl. Jap. II. 1. p. 258 1905

var. **longicuris**, MAK., in Tokyo Bot. Mag. X. p. (109) 1896, et id. XII. p. 15 1898 ; YABE, in Tokyo Bot. Mag. XVII. p. 142 1903 ; SCHL., Orchid. Sino-Jap. Prodr. p. 100 1919 ; MIY. et KUDO, Fl. Hokk. & Sagh. III. p. 359 1932

Syn. *Aceras longicuris*, WRIGHT, in Mem. Acad. sér. 2. VI. p. 461 1859 ; A. GRAY, Bot. Jap. p. 411 1858

Aceras angustifolia, LINDL. var. *longicuris*, MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 207 1866 ; FR. et SAV., Enum. Pl. Jap. II. p. 30 1876 ; MAK., in Tokyo Bot. Mag. III. p. 7 1839

Nom. Jap. *Mukago-sō*

Leg. Ipse, Onoaida, Jun. 23, 1928.

Distr. Yezo, Honsyū, Sikoku, Kyūsyū, Amami-Ōsima, Manchuria.

Note. Occurs on open grassy lands at low altitudes.

Platanthera, L. C. RICH., in Mem. Mus. Paris. IV. p. 48 (1818 ; ENDL., Gen. Pl. n. 1515 (1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 624 (1883) ; PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 92 1889 ; SCHL., Orchid. p. 64 (1915)

Syn. *Lysias*, SALISB., in Trans. Hort. Soc. I. p. 288 (1812)

Mecosa, BL., Bijdr. p. 403, t. 1 (1825)

Benthamia, (non LINDL.) A. RICH., in Mem. Soc. Hist. Nat. Paris. IV. p. 37 (1828)

Platanthera amabilis, KOIDZ., in MATSUM. Ic. Pl. Koishik. III. 5. p. 83. t. 190 (1917 ;

MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1668 (1931)

Nom. Jap. Yakusima-tidori

Leg. Ipse, Aug. 31, 1931.

Distr. Endemica.

Notc. Very often occurs in the lauri-aciculisilvae as undergrowth.

Platanthera interrupta, MAXIM., in Mém. Biolog. XII. p. 550 (1887), et in Bull. Acad. Sc. Petersb. XXXI. p. 106 (1887); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 56 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 259 (1905); NAK., Fl. Kor. II. p. 220 (1911); YAMAZUTA, List Manch. Pl. p. 75 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1670 (1931)

Nom. Jap. Ôbano-tombosô

Leg. Ipse, Aug. 1931.

Distr. Honsyû, Sikoku, Kyûsyû, Korea, Manchuria, China.

Notc. Occurs in somewhat wet places in the lauri-aciculisilvae.

Platanthera nipponica, MAK., in Tokyo Bot. Mag. XVI. p. 153 (1902); MATSUM., Ind. Pl. Jap. II. 1. p. 260 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 115 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1671 (1931)

Syn. Platanthera Matsumurana, SCHL., in Fedd. Repert. II. p. 167 (1906)

Nom. Jap. Kobanotonbosô

Leg. Ipse, Aug. 31, 1931.

Distr. Honsyû, Sikoku.

Note. Occurs on wet ground in the lauri-aciculisilvae from 600 m up to 1700 m above the sea level.

Platanthera yakumontana, MASAMUNE, sp. nov.

Terrestris glabra erecta, ca. 15 cm alta, radicibus incrassatis, carnosis villosis; folio basilari singulo, elliptico, apice rotundato, basi cuneato, in petiolum brevem angusto, ca. 3 cm longo 2 cm lato, glabro, caule substricto, tereti, glabro, basi vagina 1-2 praedito; foliis caulinis 3-5 sessilibus, distantibus, erecto-patentibus, inferiore ovato-elliptico acuto, amplexicauli ca. 3 cm longo, 1 cm lato, superioribus multo minoribus. Spica erecta laxa ca. 5 flora, bracteis erectis linearilanceolatis acuminatis ca. 8 mm longis superioribus gradatim brevioribus. Flores albo-virides. Sepala subaequalia patentia, posticum latius late ovatum 2 mm longum 1.5 mm latum apice obtusum et incurvatum, lateralia oblique ovato-lanceolata ca. 3 mm longa 1.3 mm lata, patentia. Petala oblique ovato-lanceolata, ca. 2.5 mm longa 1.2 mm lata. Labellum ovato-oblongum 2.5 mm longum 1.7 mm latum integrum basi calcaratum, calcari 2 mm longo 0.8 mm lato apice obtuso vix recurvo. Columna ca. 1 mm alta.

Nom. Jap. Tukusi-tidori

Leg. Ipse, Jul. 1928.

Distr. Kyûsyû, Amami-Ôsima.

Note. The species is often found in the lauri-aciculisilvae as undergrowth from about 600 m up to 1700 m above the sea level, and it is not yet reported in lands further south than Amami-Ôsima.

Habenaria, WILLD., Sp. Pl. IV. 1. p. 44 (1805);
ENDL., Gen. Pl. n. 1525 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 624 (1833);

PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 95 (1889); SCHL., Orchid. p. 75 (1915); LEMÉE, Dict. Gen. Pl. Phan. III. p. 407 (1931)

Habenaria formosana, (MATSUM. et HAY.) SCHL., Orchid. Sino-Jap. Prodr. p. 127 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1650 (1931)

Syn. *Coeoglossum formosanum*, MATSUM. et HAY., ex SCHL. Orchid. Sino-Jap. Prodr. p. 127 (1919)

Habenaria tentaculata, RCHB. f. var. *acutifolia*, HAY., Mat. Fl. For. p. 354 (1911)

Nom. Jap. *Takasago-sagisô*

Leg. Ipse, Jul. 12, 1928.

Distr. Nakanosima, Okinawa, Taiwan.

Note. Occurs by the roadside, and on waste but somewhat humus ground.

Microtis, R. BR., Prodr. p. 320 (1810; ENDL., Gen. Pl. n. 1588 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 609 (1833); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 101 (1889); SCHL., Orchid. p. 83 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 473 (1932)

Microtis formosana, SCHL., in Engl. Jahrb. XLV. p. 382 (1911); SCHL., Orchid. Sino-Jap. Prodr. p. 138 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1660 (1931)

Syn. *Microtis parviflora*, (non R. BR.) HANCE, in Journ. Bot. XVII. p. 15 (1879); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 46 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 254 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 417 (1906)

Microtis unifolia, (non RCHB.) KRANZL., in Engl. Bot. Jahrb. VI. p. 55 (1884)

Nom. Jap. *Nirabaran*

Leg. Ipse, Hirausti, April. 2, 1927.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China.

Note. Occurs in the plains, waste lands and the borders of cultivated lands.

Listera, R. BR., in AITON Hort. Kew ed. 2. V. p. 201 1813; ENDL., Gen. Pl. n. 1552 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 595 (1833); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 113 (1839); SCHL., Orchid. p. 95 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 124 (1932)

Syn. *Cardiophyllum*, EHRB., IV. p. 148 (1789)

Diphryllum, RAF., in Med. Repos. New York. V. p. 356 (1803)

Listeria, SPRENG., Anleit. ed. 2. II. 1. p. 293 (1817)

Listera Makinoana, OHWI, in Tokyo Bot. Mag. XLV. p. 384 (1931)

Syn. *Listera puberula*, (non MAX.) K. M. WIEG., in Bull. Torr. Bot. Cl. XXVI. p. 61. t. 356, 1 (1898)

Listera Savatieri, (non MAXIM.) MAK., in Tokyo Bot. Mag. XIX. p. 7 (1905); NAK., Fl. Kor. II. p. 230 (1911); SCHL., Orchid. Sino-Jap. Prodr. p. 142 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1657 (1931)

Listera Eschscholtziana, (non CHAM.) MATSUM., Ind. Pl. Jap. II. 1. p. 253 (1905)

Ophrys Savatieri, MAK., in Jap. Journ. Bot. VI. p. 34 (1929)

Nom. Jap. *Ao-hutabaran*

Leg. Kosugidani, Jul. 28, 1927.

Distr. Yezo, Honsyû, Sikoku, Korea.

Note. Grows in the lauri-aciculisilvae, and marks its southern limit in this island.

Listera shikokiana, MAK., in Tokyo Bot. Mag. VII. p. 68 (1893); MATSUM., Ind. Pl. Jap. II. 1. p. 253 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 143 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1657 (1931)

Nom. Jap. *Murasaki-hutabaran*

Leg. Ipse, Kosugidani, Mart. 17, 1927.

Dist. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. Occurs on humus ground in the lauri-aciculisilvae.

var. **albo-striata**, MASAMUNE

Folia ad medio albo-striata.

Nom. Jap. *Hûri-himehutabaran*

Leg. Ipse, Kosugidani, Sept. 18, 1923.

Note. Endemic variety. Occurs in the lauri-aciculisilvae.

Pogonia, JUSS., Gen. Pl. p. 65 (1789); ENDL., Gen.

Pl. n. 1601 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 615 (1833); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 106 (1839); SCHL., Orchid. p. 95 (1915)

Pogonia japonica, RCHB. f. var. *minor*, MAK., in Tokyo Bot. Mag. XII. p. 103 (1898); MATSUM., Ind. Pl. Jap. II. 1. p. 262 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 144 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929)

Syn. *Pogonia minor*, MAK., in Tokyo Bot. Mag. XXIII. p. 137 (1909); MORI, Enum. Pl. Cor. p. 106 (1922); MAK. et NEM., Fl. Jap. ed. 2. p. 1673 (1931)

Nom. Jap. *Yamatokisô*

Leg. Ipse, Jul. 18, 1928.

Dist. Honsyû, Sikoku, Kyûsyû, Korea, Yezo (Species), Taiwan (Species)

Note. Grows in wet lands in the Pseudosasa Owatarii Association, and marks its southern limit in this island.

Galeola, LOUR., Fl. Cochinch. II. p. 520 (1790);

ENDL., Gen. Pl. n. 1617 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 589 (1833); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 108 (1839); SCHL., Orchid. p. 97 (1915)

Syn. *Erythrorchis*, BL., Rumphia I. p. 200, t. 70 (1835)

Pogochilus, FALCON, in Hook. Journ. Bot. IV. p. 73 (1842)

Haematorchis, BL., Rumphia, IV. t. 200 B (1848)

Galeola septentrionalis, REICHB. f., Xen Orch. II. p. 78 (1855); MAXIM., in Mém. Biolog. VIII. p. 647 (1872); FR. et SAV., Enum. Pl. Jap. II. p. 39 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 246 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 145 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 59 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1644 (1931); LEMÉE, Dict. Gen. Pl. Phan. III. p. 182 (1931)

Nom. Jap. *Tuti-akebi*

Leg. Ipse, Aug. 28, 1928.

Dist. Yezo, Honsyû, Sikoku, Kyûsyû.

Note. Occurs on rich humus ground in the laurisilvae or in the lauri-aciculisilvae; has its southern limit in this island.

Lecanorchis, BL., Mus. Bot. Lugd. Bat. II. p. 188

(1856); BENTH. et HOOK. f., Gen. Pl. III. p. 603 (1833); PFITZ., in ENGL. u.

PRANT. Nat. Pfl.-fam. II. vi. p. 107 (1889); SCHL., Orchid. p. 98 (1915); LEMÉE, Dict. Gen. Pl. Phan. III. p. 933 (1931)

Lecanorchis japonica, BL., Mus. Bot. Lugd. Bat. II. p. 188 (1856), et Orch. Arch. Ind. I. p. 177 t. 62, f. 1 (1864); FR. et SAV., Enum. Pl. Jap. II. p. 34 (1876); MATSUM., Ind. Pl. Jap. II. 1. p. 251 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 146 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1653 (1931)

Nom. Jap. *Muyóran*

Leg. Ipse, Aug. 8, 1924.

Distr. Honsyū, Sikoku, Kyūsyū, Okinawa.

Note. Occurs on rich humus ground in the laurisilvae or in the lauri-aculisilvae.

Lecanorchis purpurea, MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929)

Nom. Jap. *Murasaki-muyóran*

Leg. Ipse, Aug. 8, 1924.

Distr. Kyūsyū.

Note. Occurs as undergrowth on rich humus ground in the laurisilvae.

Aphyllorchis, BL., Bijdr. f. 77 (1825), et Mus. Bot. Lugd. Bat. I. p. 30 (1849); BENTH. et HOOK. f., Gen. Pl. III. p. 606 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 112 (1839); SCHL., Orchid. p. 98 (1915)

Syn. *Epiphanes*, BL., Bijdr. p. 421, t. 4. (1825)

Gamoplexis, FALCON, in Trans. Linn. Soc. XX. p. 293, t. 13 (1847)

Aphyllorchis tanegashimensis, HAY., Mat. Fl. Formos. p. 344 (1911); SCHL., Orchid. Sino-Jap. Prodr. p. 147 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 58 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1616 (1931); LEMÉE, Dict. Gen. Pl. Phan. I. p. 334 (1929)

Nom. Jap. *Tanegasima-muyóran*

Leg. Ipse, Aug. 6, 1924.

Distr. Okinawa, Tanegasima.

Note. Occurs as undergrowth in the laurisilvae near the sea level. Mr. SASAKI reported that the species is indigenous to Formosa, but the one which was thought to be is not the *Aphyllorchis*.

Epipactis, ADANS., Fam. II. p. 70 (1763); R. BR., in AITON, Hort. Kew ed. 2. V. p. 201 (1813); ENDL., Gen. Pl. n. 1553 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 619 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 111 (1889); SCHL., Orchid. p. 102 (1915); LEMÉE, Dict. Gen. Pl. Phan. II. p. 888 (1930)

Syn. *Limnias*, EHRB., Beitr. IV. p. 147 (1789)

Epipactum, RITZ., in Marburg. Schrift. II. p. 125 (1831)

Limodorum, O. KUNTZE, Rev. Gen. Pl. II. p. 671 (1891) p.p.

Epipactis longifolia, BL., Orch. Arch. Ind. p. 185 (1858); SCHL., Orchid. Sino-Jap. Prodr. p. 148 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 59 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1639 (1931)

Syn. *Serapias longifolia*, THUNB., Fl. Jap. p. 28 (1784)

Epipactis Thunbergii, A. GRAY, in Narr. Perry Exped. II. p. 319 (1856); WETTST.,

in Oerst. Bot. Zeit. XXXIX. p. 428 (1889); MATSUM., Ind. Pl. Jap. II. 1. p. 245 (1905); NAK., Fl. Kor. II. p. 222 (1911)

Limodorum Thunbergii, O. KUNTZE, Rev. Gen. Pl. II. p. 672 (1891)

Helleborine Thunbergii, DRUCE, in Bull. Torr. Bot. Cl. XXXVI. p. 547 (1909)

Nom. Jap. *Suzuran*

Leg. Ipse, Kosugidani, Jul. 12, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. Occurs in open wet lands in the lauri-aciculisilvae from 500 m up to 700 m above the sea level, and has its southern limit in this island.

Epipogon, (*Epipogum*) [GMEL., Fl. Sibir. I. p. 11, t. 272 (1747)] L. C. RICH. f., in Mem. Mus. Paris. IV. pp. 42, 50 (1818); ENDL., Gen. Pl. n. 1545 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 617 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 111 (1889); SCH., Orchid. p. 103 (1915); LEMÉE, Dict. Gen. Pl. Phan. II. p. 890 (1930)

Epipogon Rolfei, (HAY.) SCHLT., in Fedde, Rep. Sp. Nov. X. p. 5 (1911), et Orchid. Sino-Jap. Prodr. p. 153 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1640 (1931)

Syn. *Galera Rolfei*, HAY., Mat. Fl. Formos. p. 348 (1911)

Nom. Jap. *Ryûkyû-muyôran*

Leg. Ipse, Jun. 29, 1928.

Distr. Okinawa, Taiwan.

Note. Found in the laurisilvae about 100 m above the sea level.

Spiranthes, L. C. RICH., in Mém. Mus. Paris. IV. p. 50 (1818); ENDL., Gen. Pl. n. 1547 (1836-40); BENTH. et HOOK. f., Gen. Pl. p. 596 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 113 (1889); SCHL., Orchid. p. 112 (1915)

Syn. *Orchistrum*, [MICH., Nov. Pl. Gen. p. 30, t. 26 (1729)] ex GREENE, Man. Bot. San Francisco Bay. p. 305 (1894)

Aristotelea, LOUR., Fl. Cochinch. p. 522 (1790)

Spiranthos, ST.-LAG., in Ann. Soc. Bot. Lyon VII. p. 56 (1880)

Spiranthes sinensis, (PERS.) AMES, Orch. II. p. 53 (1908); SCHL., Orchid. Sino-Jap. Prodr. p. 160 (1919); MERR., Enum. Philipp. Pl. I. p. 268 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929); MIY. et KUDO, Fl. Hokk. and Sagh. III. p. 377 (1932)

Syn. *Aristotelea spiralis*, LOUR., Fl. Cochinch. p. 522 (1790)

Neottia sinensis, PERS., Syn. II. p. 511 (1807)

Spiranthes australis, KOM., Fl. Mansh. I. p. 525 (1901); MATSUM., Ind. Pl. Jap. II. 1. p. 263 (1905); NAK., Fl. Kor. II. p. 225 (1911)

Spiranthes spiralis, MAK., in Journ. Jap. Bot. III. p. 25 (1926); MAK. et NEM., Fl. Jap. ed. 2. p. 1676 (1931)

Nom. Jap. *Nezibana*

Leg. Ipse, Jun. 1928.

Distr. Saghalien, Yezo, Honsyû, Sikoku, Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Korea, Manchuria, China.

Note. Occurs on wet grounds in the lauri-aciculisilvae, and common in the Far East.

Goodyera, R. BR., in AITON, Hort. Kew ed. 2. V. p. 197 (1813); ENDL., Gen. Pl. n. 1559 (1836-40); BENTH. et HOOK. f., Gen. Pl.

- III. p. 602 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 117 (1889); SCHL., Orchid. p. 114 (1915); LEMÉE, Dict. Gen. Pl. Phan. III. p. 318 (1931)
Syn. *Orchiodes*, [TREW., in Acta Acad. Nat. Cur. III. p. 409 t. 6. f. 7 (1736)] O. KUNTZE, Rev. Gen. Pl. II. p. 674 (1891)
Goodiera, KOCH, Synops. ed. 2. p. 802 (1844)
- Goodyera Matsumurana**, SCH., in Bull. Herb. Boiss. sér. 2. p. 298 (1906), et in Orchid. Sino-Jap. Prodr. p. 164 (1919); MATSUM. et HAY., Enum. Pl. Formos. p. 417 (1906); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1647 (1931)
Syn. *Epipactis Matsumurana*, EATON, in Proc. Biol. Soc. Wash. XXI. p. 64 (1908)
Nom. Jap. *Ryūkyū-syusuran*
Leg. Ipse, Hirauti, April. 3, 1927.
Distr. Amami-Ōsima, Okinawa, Taiwan.
Note. Occurs in the laurisilvae about 200 m above the sea level.
- Goodyera Maximowicziana**, MAK., in Tokyo Bot. Mag. XXIII. p. 137 (1909); NAK., Fl. Kor. II. p. 266 (1911); SCHL., Orchid. Sino-Jap. Prodr. p. 164 (1919); MAK. et NEM., Fl. Jap. p. 1647 (1931)
Syn. *Goodyera bifida*, MAXIM., in Mém. Biolog. XII. p. 922 (1888)
Nom. Jap. *Akebono-syusuran*
Leg. Ipse, Aug. 5, 1924.
Distr. Honsyū, Sikoku, Kyūsyū, Korea.
Note. Occurs on humus ground in the laurisilvae as undergrowth and marks its southern limit in this island.
- Goodyera Ogatai**, YAMAMOTO, Supp. Ic. Pl. Formos. III. p. 9 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1648 (1931)
Nom. Jap. *Sima-syusuran*
Leg. Onoaida, Sept. 5, 1926.
Distr. Okinawa, Taiwan.
Note. Occurs on humus ground made by fallen foliage in the laurisilvae.
- Goodyera pendula**, MAXIM., in Mém. Biolog. XII. p. 924 (1888); MATSUM., Ind. Pl. Jap. II. 1. p. 247 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 166 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1648 (1931)
Syn. *Epipactis pendula*, EATON, in Proc. Biol. Soc. Wash. XXI. p. 65 (1908)
Nom. Jap. *Turi-syusuran*
Leg. Ipse, Jul. 31, 1924.
Distr. Sikoku, Kyūsyū, Taiwan.
Note. Occurs as epiphyte in the laurisilvae.
- Goodyera procera**, HOOK., Exot. Fl. t. 39 (1823); MAXIM., in Mém. Biolog. XII. p. 926 (1890); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 45 (1903); MATSUM. et HAY., Enum. Pl. Formos. p. 417 (1906); SCHL., Orchid. Sino-Jap. Prodr. p. 166 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); NAK., in Biogeogr. Soc. Jap. I. p. 255 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1648 (1931)
Syn. *Neottia procera*, KER., in Bot. Reg. t. 639 (1822)
Cionosaccus lanceolatus, BREDA, Orch. Kuhl. Hass. t. 1 (1827)
Goodyera carnea, A. RICH., in Ann. Sci. Nat. Ser. 2. XV. p. 40 (1841)
Cordylostylis foliosa, FALC., in Hook. Journ. Bot. IV. p. 75 (1842)

Leucostachys procera, HOFFSG., Preisv. Orch. p. 26 (1842)

Goodyera lancifolia, FR. et SAV., Enum. Pl. Jap. II. p. 520 (1876)

Orchiodes procerum, O. KUNTZE, Rev. Gen. Pl. II. p. 675 (1891)

Epipactis procera, EATON, in Proc. Biol. Soc. Wash. XXI. p. 65 (1908)

Nom. Jap. Kinginsô

Leg. Onoaida, Jul. 1928.

Distr. Amami-Ôsima, Okinawa, Taiwan, Bonins, China.

Note. I found this plant in the laurisilvae about 300 m above the sea level. It is not yet reported in lands further north than this island.

Goodyera Schlechtendaliana, REICHB. f., in Linnaea XXII. p. 861 (1849); MATSUM., Ind. Pl. Jap. II. 1. p. 248 (1905); NAK., Fl. Kor. II. p. 226 (1911); SCHL., in Orchid. Sino-Jap. Prodr. p. 167 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1649 (1931)

Syn. *Georchis Schlechtendaliana*, RCHB. f., in Linnaea XXII. 861 (1849)

Goodyera japonica, BL., Orch. Arch. Ind. p. 58 (1858)

Goodyera similis, BL., Orch. Arch. Ind. p. 59 (1858)

Orchiodes Schlechtendalianum, O. KUNTZE, Rev. Gen. Pl. II. p. 675 (1891)

Epipactis Schlechtendaliana, EATON, in Proc. Biol. Soc. Wash. XXI. p. 68 (1908)

Nom. Jap. Miyama-uzura

Leg. Ipse, Jul. 25, 1924.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Korea, China.

Note. Occurs on humus ground in the laurisilvae or in the lauri-aciculililvae.

Goodyera velutina, MAXIM., in REGEL. Gartenfl. XVI. p. 36, t. 533 (1867); FR. et SAV., Enum. Pl. Jap. II. p. 38 (1876); KRANZ., in Engl. Bot. Jahrb. VI. p. 55 (1885); MAK., Ill. Fl. Jap. I. t. 38 (a-b) (1891); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 46 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 248 (1905); NAK., Fl. Kor. II. p. 227 (1911); SCHL., Orchid. Sino-Jap. Prodr. p. 168 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1649 (1931)

Syn. *Orchiodes velutinum*, O. KUNTZE, Rev. Gen. Pl. II. p. 675 (1891)

Epipactis velutina, EATON, in Proc. Biol. Soc. Wash. XXI. p. 65 (1908)

Nom. Jap. Syusuran

Leg. Ipse, Aug. 31, 1931.

Distr. Honsyû, Kyûsyû, Tanegasima, Korea, China.

Note. Occurs as undergrowth in the lauri-aciculililvae, and has its southern limit in this island.

Goodyera yakushimensis, NAK., in Tokyo Bot. Mag. XXXVII. p. 8 (1923); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1649 (1931)

Nom. Jap. Yakusima-syusuran

Leg. Ipse, Jul. 25, 1924.

Distr. Amami-Ôsima.

Note. Occurs on humus ground in the laurisilvae at low altitudes; is restricted to Amami-Ôsima and Yakusima.

Zeuxine, (Zeuxina) LINDL., Orchid. Scel. p. 9

(1826); ENDL., Gen. Pl. n. 1577 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 599 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 116 (1889); SCHL., Orchid. p. 123 (1915)

Syn. *Adenostylis*, BL., Bijdr. p. 414 (1825)

Tripleura, LINDL., in WALL. Cat. n. 7391 (1832); Bot. Reg. t. 1618 (1833)
Zuxine, WIGHT, Ic. V. p. 16 (1852)
Adenostyles, BENTH. et HOOK. f., Gen. Pl. III. p. 599 (1883)

Zeuxine strateumatica, SCHL., Orch. Dtsch. Neu-Guin. p. 77 (1911), et Orchid. Sino-Jap. Prodr. p. 173 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1682 (1931)

Syn. *Orchis strateumatica*, LINN., Sp. Pl. ed. 1. p. 943 (1753)

Neottia strateumatica, R. BR., Prodr. p. 319 (1810)

Spiranthes strateumatica, LINDL., Bot. Reg. sub. t. 823 (1824)

Adenostylis sulcata, BL., Bijdr. p. 414 (1825)

Zeuxine sulcata, LINDL., Gen. Sp. Orch. p. 485 (1840); ITO, in Tokyo Bot. Mag. XIV. p. 27, t. 2 (1900); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 42 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 264 (1905)

Adenostylis strateumatica, AMES, Orchid. II. p. 59 (1903)

Nom. Jap. *Kinuran*

Leg. Ipse, Kurio, Mart. 22, 1923.

Distr. Kyúsyú, Okinawa, Taiwan, China.

Note. Occurs in the plain, on waste ground, or near cultivated lands.

Zeuxine yakusimensis, MASAMUNE, in Journ. Trop. Agr. III. p. 393 (1931)

Nom. Jap. *Yakusima-aka-syusuran*

Leg. Ipse, ca. Onoaida, Sept. 1, 1931.

Note. This endemic species was found as undergrowth in the lauri-aciculisilvae about 500 m above the sea level.

Myrmechis, BL., Fl. Jav. Nov. sér. I. Orchid. p. 64 t. 21 (1858); BENTH. et HOOK. f., Gen. Pl. III. p. 601 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 117 (1889); SCHL., Orchid. p. 124 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 617 (1932)

Myrmechis tsukusiana, MASAMUNE, in Tokyo Bot. Mag. XLIII. p. 250 (1929), et Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1660 (1931)

Nom. Jap. *Tukusi-aridósiran*

Leg. Ipse, Jul. 12, 1928.

Distr. Endemica.

Note. Occurs on humus ground in the laurisilvae; flowering time from August to September.

Odontochilus, BL., Fl. Jav. Nov. sér. I. Orchid. p. 66, tt. 29 et 36 (1858); BENTH. et HOOK. f., Gen. Pl. III. p. 600 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 117 (1889); SCHL., Orchid. p. 124 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 809 (1932)

Odontochilus Inabai, HAY., Ic. Pl. Formos. IV. p. 104 (1914); SCHL., Orchid. Sino-Jap. Prodr. p. 175 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929)

Syn. *Anoetochilus Inabai*, HAY., Ic. Pl. Formos. IV. p. 102, t. 16 (1914); MAK. et NEM., Fl. Jap. ed. 2. p. 1616 (1931)

Nom. Jap. *Inabaran*

Leg. Ipse, ca. Hirauti, Jul. 25, 1924.

Distr. Okinawa, Taiwan.

Note. This orchid is found as undergrowth in the lauri-aciculisilvae about 300 m above the sea level on the southern side of the island.

Anoectochilus, BL., Bijdr. p. 411 t. 15 (1825);
ENDL., Gen. Pl. n. 1569 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 598 (1883);
PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 116 (1889); SCHL., Orchid. p. 125 (1915); LEMÉE, Dict. Gen. Pl. Phan. I. p. 286 (1929)

Syn. *Anecochilus*, BL., Bijdr. p. 411, t. 15 (1825)

Chrysobaphus, WALL., Tent. Fl. Nepal. p. 37, t. 27 (1826)

Anaectochilus, LINDL., Gen. et Sp. Orchid. p. 498 (1840)

Anectochilus, BL., Fl. Jav. nov. sér. I. Orchid. p. 38 (1858)

Anoectochilus yakushimensis, YAMAMOTO, in Tokyo Bot. Mag. XXXVIII. p. 131 (1923),
et Supp. Ic. Pl. Formos. II. p. 3 (1926); MASAMUNE, Prel. Rep. Veg. Yak. p. 58
(1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1616 (1931)

Nom. Jap. *Yakusima-hime-aridósiran*

Leg. Ipse, Kosugidani, Sept. 30, 1926.

Distr. Okinawa.

Note. Occurs as undergrowth in the lauri-aciculisilvae; flowering time from August to September.

Tropidia, LINDL., in Wall. Cat. n. 7386 1832;
Bot. Reg. t. 1618 (1833); ENDL., Gen. Pl. n. 1565 (1835-40); BENTH. et HOOK. f.,
Gen. Pl. III. p. 592 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 121
(1888); SCHL., Orchid. p. 127 (1915)

Syn. *Cnemidia*, LINDL., Bot. Reg. t. 1618 (1833)

Decaissnia, LINDL., Gen. et Sp. Orchid. Pl. p. 462 (1840)

Govindocia, WIGHT, Ic. VI. p. 34, t. 2090 (1853)

Tropidia nipponica, MASAMUNE, in Tokyo Bot. Mag. XLIII. p. 249 (1929), et Prel. Rep.
Veg. Yak. p. 62 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1680 (1931)

Nom. Jap. *Yakusimanettairan*

Leg. Ipse, ca. Hiraui, Jun. 29, 1928.

Distr. Kyûsyû, Sikoku.

Note. Occurs as undergrowth in the laurisilvae from about 100 m up to 300 m above the sea level.

Tainia, BL., Bijdr. p. 354 (1825); ENDL., Gen.
Pl. n. 1395 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 515 (1883) p.p.; PFITZ.,
in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 153 (1889) p.p.; SCHL., Orchid. p. 129
(1915)

Syn. *Mitopetalum*, BL., Fl. Jav. Pl. p. VIII (1828)

Ania, LINDL., Gen. et Sp. Orchid. Pl. p. 129 (1831)

Tainia laxiflora, MAK., in Tokyo Bot. Mag. XXIII. p. 138 (1909); SCHL., Orchid. Sino-
Jap. Prodr. p. 180 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929); MAK.
et NEM., Fl. Jap. ed. 2. p. 1677 (1931)

Syn. *Oreorchis laxiflora*, ITO ex MAK., in Tokyo Bot. Mag. XXIII. p. 138 (1909)

Calanthe laxiflora, MAK., in Tokyo Bot. Mag. XXIII. p. 138 (1909)

Nom. Jap. *Hime-tokenran*

Leg. Ipse, Yaegadake, Mart. 19, 1923.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa.

Note. This terrestrial orchid grows in the laurisilvae from 400 m up to 800 m above the sea level.

- Oberonia**, LINDL., Gen. et Sp. Orchid. Pl. p. 15 (1830); ENDL., Gen. Pl. n. 1330 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 494 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 131 (1889); SCHL., Orchid. p. 160 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 789 (1932)
Syn. *Iridorkis*, THOU., in Nour. Bull. Soc. Philom. Paris. I. p. 319 (1809)
Iridorchis, THOU., Hist. Pl. Orchid. Tabl. des Espéc. III. et t. 91 (1822)
Titania, ENDL., Prodr. Fl. Norfolk. p. 31 (1833)

Oberonia japonica, MAK., Ill. Fl. Jap. I. t. 41 (1891); MATSUM., Ind. Pl. Jap. II. 1. p. 255 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 195 (1919); MORI, Enum. Pl. Cor. p. 104 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929)

- Syn.** *Malaxis japonica*, MAXIM., in Bull. Acad. Petersb. XXII. p. 257 (1877)
Oberonia japonica, MAK. var. *aurantiaca*, MAK., in Journ. Jap. Bot. IV. 6, p. 10 (1927); MAK. et NEM., Fl. Jap. ed. 2. p. 1662 (1931)

Nom. Jap. *Yōrakuran*

Leg. Ipse, Kosugidani, Aug. 1928.

Distr. Honsyū, Sikoku, Kyūsū, Korea.

Note. Occurs in the lauri-aciculisilvae.

Oberonia Makinoi, MASAMUNE, nom. nov.

- Syn.** *Oberonia japonica*, MAK. form. *major*, MAK., in IINUMA Sōmoku Dzusetzu ed. Mak. IV. p. 1198 Pl. XXIX (1912)

Oberonia, sp. MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929)

Nom. Jap. *Ōbayōrakuran*

Leg. Ipse, Jul. 25, 1924.

Note. This plant grows as epiphyte on tree trunks in the laurisilvae near the sea level and in the lauri-aciculisilvae.

- Liparis**, L. C. RICH., in Mem. Mus. Paris. IV. pp. 43, 52 (1818); ENDL., Gen. Pl. n. 1340 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 495 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 130 (1889); SCHL., Orchid. p. 161 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 115 (1932)
Syn. *Leptorkis*, THOU., in Nouv. Bull. Soc. Philom. Paris. I. p. 319 (1809)
Leptorchis, THOU., Hist. Pl. Orchid. Tabl. des Espéc. I. et t. 25 (1822)
Empusa, LINDL., Bot. Reg. t. 825 (1824)
Gastroglottis, BL., Bijdr. p. 397 (1825)
Empusaria, REICHB., Consp. p. 69 (1828)
Androchilus, LIEBM., in Bot. Notis, p. 101 (1844)
Platylepis, LINDL., Veg. Kingd. p. 181 (1847)

Liparis formosana, REICHB. f., Gard. Chron. I. p. 394 (1880); MATSUM., Ind. Pl. Jap. II. 1. p. 251 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 198 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1654 (1931)

Nom. Jap. *Yūkōkuran*

Leg. A. KIMURA! Aug. 10, 1922.

Distr. Honsyū, Kyūsū, Amami-Ōshima, Okinawa, Taiwan.

Note. This terrestrial orchid grows in the laurisilvae or the lauri-aciculisilvae and sometimes in the open.

Liparis Kramerii, FR. et SAV., Enum. Pl. Jap. II. pp. 22, 509 (1876); MAK., in Tokyo Bot. Mag. III. p. 7 (1889); MATSUM., Ind. Pl. Jap. II. 1. p. 252 (1905); NAK., Fl. Kor. II. p. 224 (1911); SCHL., Orchid. Sino-Jap. Prodr. p. 199 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1654 (1931)

Syn. *Leptorchis Kramerii*, O. KUNTZE, Rev. Gen. Pl. p. 671 (1891)

Nom. Jap. *Zigabati-sô*

Leg. Ipse, Yaegadake, Jun. 18, 1928.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea.

Note. Occurs as undergrowth in the lauri-aciculisilvae from 1000 m up to 1500 m above the level of the sea and has its southern limit in this island.

Liparis nervosa, LINDL., Gen. et Sp. Orch. Pl. p. 26 (1840); FR. et SAV., Enum. Pl. Jap. II. p. 21 (1876); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 7 (1903); MATSUM., Ind. Pl. Jap. II. p. 252 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 406 (1906); SCHL., Orchid. Sino-Jap. Prodr. p. 201 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1655 (1931)

Syn. *Ophrys nervosa*, THUNB., Fl. Jap. p. 27 (1784)

Epidendrum nervosum, THUNB., in Journ. Linn. Soc. II. p. 327 (1794)

Cymbidium nervosum, SW., in Nov. Act. Ups. VI. p. 76 (1799)

Malaxis nervosa, SW., in Vet. Acad. Hand. Stochk. XXI. p. 235 (1800)

Sturmia nervosa, RCHB. f., in Bonpl. III. p. 250 (1855)

Leptorchis nervosa, O. KUNTZE, Rev. Gen. Pl. II. p. 671 (1891)

Liparis corniculata, MAK., Ill. Fl. Jap. t. 47 (1891)

Liparis bambusaefolia, MAK., in Tokyo Bot. Mag. VI. p. 48 1892

Nom. Jap. *Kokuran*

Leg. Ipse, Jul. 30, 1924.

Distr. Honsyû, Sikoku, Kyûkyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan, China.

Note. Occurs in the laurisilvae near the sea level or in the lauri-aciculisilvae about 800 m above the sea level.

Liparis odorata, LINDL., Gen. et Sp. Orchid. Pl. p. 26 (1830); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 7 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 252 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 407 (1906); SCHL., Orchid. Sino-Jap. Prodr. p. 201 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1655 (1931)

Syn. *Malaxis odorata*, WILLD., Sp. Pl. IV. p. 91 (1805)

Stelis racemosa, SM., in Rees. Cyclop. XXXIV. p. 10 (1814)

Tribrachia racemosa, LINDL., Coll. Bot. Sub. t. 41 (1825)

Liparis paradoxa, RCHB. f., in Walp. Ann. VI. p. 218 (1861)

Leptorchis odorata, O. KUNTZE, Rev. Gen. Pl. II. p. 671 (1891)

Nom. Jap. *Sasabaran*

Leg. Ipse, ca. Onoaida, Jun. 24, 1928.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, China.

Note. This terrestrial orchid is found in waste lands or by the roadside.

Liparis plicata, FR. et SAV., Enum. Pl. Jap. II. pp. 22, 509 (1876); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 8 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 253 (1905); MATSUM. et HAY., Enum. Pl. Formos. p. 408 (1906); SCHL., Orchid. Sino-Jap. Prodr. p. 202 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1656 (1931)

Nom. Jap. *Tikeiran*

Leg. Ipse, Jul. 21, 1924.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Taiwan, China.

Note. Grows as epiphyte in the laurisilvae or in the lauri-aciculisilvae from the sea level up to about 500 m.

Liparis yakusimensis, MASAMUNE, in Tokyo Bot. Mag. XLIII. p. 250 (1929), et Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1656 (1931)

Nom. Jap. *Gibôsirân*

Leg. Ipse, Aug. 31, 1931.

Distr. Kyûsyû (Mt. Kaimon in Prov. Satsuma)

Note. Occurs in the lauri-aciculisilvae from about 700 m up to 1100 m above the sea level; marks its southern limit in this island.

Dendrobium, SWARTZ, in Nova Act. Soc. Upsal.

VI. p. 82 (1790); LINDL., Gen. et Sp. Orchid. Pl. p. 74 (1830); ENDL., Gen. Pl. n. 1369 1836-40; BENTH. et HOOK. f., Gen. Pl. III. p. 493 (1833); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 173 (1839); KRANZ., in Engl. Pfl.-reich. IV. 50 ii. B. 21, (Heft 45) p. 25 (1910); SCHL., Orchid. p. 249 1915; LEMÉE, Dict. Gen. Pl. Phan. II. p. 539 1930.

Syn. *Callista*, LOUR., Fl. Cochinch. p. 519 (1790)

Ceraia, LOUR., Fl. Cochinch. p. 518 (1790)

Hederorkis, THOU., in Nouv. Bull. Soc. Philom. Paris. I. p. 319 (1809)

Hederorchis, THOUR., Hist. Pl. Orchid. Tabl. des Espèc. III. et t. 90 (1822)

Dendrobium moniliforme, SW., in Nov. Act. Upsal. VI. p. 85 (1790); FR. et SAV., Enum. Pl. Jap. II. p. 23 (1876); ROLF., in FORB. et HEMSL. Ind. Fl. Sin. III. p. 12 1903; MATSUM., Ind. Pl. Jap. II. p. 242 (1905); KRANZLIN, in Engl. Pfl.-reich. IV. 50. ii. B. 21. (Heft 45) p. 25 (1910); NAK., Fl. Kor. II. p. 218 (1911); HAY., Ic. Pl. Formos. IV. p. 44 (1914); SCHL., Orchid. Sino-Jap. Prodr. p. 212 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 59 (1929)

Syn. *Epidendrum moniliforme*, LINN., Sp. Pl. I. p. 954 (1753)

Epidendrum monile, THUNB., Fl. Jap. p. 30 (1784)

Onychium japonicum, BL., Bijdr. p. 328 (1825)

Dendrobium catenatum, LIND., Gen. et Sp. Orchid. Pl. p. 84 (1830)

Dendrobium japonicum, LINDL., Gen. et Sp. Orchid. Pl. p. 89 (1830)

Ormostemma albiflora, RAF., Fl. Tellur. IV. p. 38 1826

Dendrobium castum, BATEM., ex GARDN. Chron. p. 943 (1868)

Callista japonica, O. KUNTZE, Rev. Gen. Pl. II. p. 655 (1891)

Callista moniliformis, O. KUNTZE, Rev. Gen. Pl. II. p. 655 (1891)

Dendrobium monile, KRANZ., in ENGL. Pfl.-reich. IV. 50 ii. B. 21 (Heft 45) p. 50 (1910); MAK. et NEM., Fl. Jap. ed. 2. p. 1636 (1931)

Nom. Jap. *Sekkoku*

Leg. Ipse, Kosugidani, Aug. 1928.

Distr. Sikoku, Kyûsyû, Tanegasima, Taiwan, Korea, China.

Note. Occurs in the laurisilvae or in the lauri-aciculisilvae from the sea level up to about 700 m.

Dendrobium tosaense, MAK., Ill. Fl. Jap. I. t. 46 (1891); MATSUM., Ind. Pl. Jap. II. 1. p. 243 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 215 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 59 (1929); MAK. et NFM., Fl. Jap. ed. 2. p. 1638 (1931)

Syn. *Dendrobium père-Faurie*, HAY., Ic. Pl. Formos. VI. p. 70 (1916)

Nom. Jap. *Kibana-sekkoku*

Leg. Ipse, Onoaida, Aug. 12, 1928.

Distr. Kyûsyû, Sikoku, Amami-Ôsima, Okinawa, Taiwan.

Note. The species flourishes at low altitudes and ranges from the sea level up to about 400 m.

- Eria*, LINDL., Bot. Reg. XI. t. 904 (1825), et Gen. et Sp. Orchid. Pl. p. 65 (1830); ENDL., Gen. Pl. n. 1363 (1837); BENTH. et HOOK. f., Gen. Pl. III. p. 509 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 175 (1889); KRANZ., in ENGL. Pfl.-reich. IV. 50. II. B. 21 (Heft 45) p. 15 (1911); SCHL., Orchid. p. 280 (1915); LEMÉE, Dict. Gen. Pl. Phan. II. p. 911 (1930)
- Syn.** *Ceratum*, BL., Bijdr. p. 341 t. 46 (1825)
- Octomeria*, DON, Prodr. Fl. Nepal. p. 31 (1825)

Eria reptans, MAK., in Tokyo Bot. Mag. XV. p. 128 (1901); MAK. et NEM., Fl. Jap. ed. 2. p. 1642 (1931)

- Syn.** *Dendrobium reptans*, FR. et SAV., Enum. Pl. Jap. II. p. 510 (1879)
- Eria japonica*, MAXIM., in Bull. Acad. Sc. Petersb. XXXI. p. 103 (1887); MATSUM., Ind. Pl. Jap. II. 1. p. 245 (1905)
- Callista reptans*, O. KUNTZE, Rev. Gen. Pl. II. p. 655 (1891)
- Eria reptans*, SCHL., Orchid. Sino-Jap. Prodr. p. 219 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 59 (1929)

Nom. Jap. *Osaran*

Leg. Ipse, Kosugidani, Jul. 18, 1928.

Distr. Honsyû, Sikoku, Kyûsyû, Amami-Ôsima.

Note. Occurs as epiphyte in the laurisilvae or in the lauri-aciculisilvae from 400 m up to 800 m above the sea level.

Eria yakushimensis, NAK., in Tokyo Bot. Mag. XXXVI. p. 20 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 59 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1642 (1931)

Nom. Jap. *Ôosaran*

Leg. (fid NAKAI)

Distr. Endemica.

Note. This orchid has not yet been collected by myself.

- Phajus*, LOUR., Fl. Cochinch. p. 529 (1790); ENDL., Gen. Pl. n. 1388 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 512 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 152 (1889); SCHL., Orchid. p. 302 (1915)
- Syn.** *Cyanorkis*, THOU., in Nour. Bull. Soc. Philom. Paris. I. p. 317 (1809)
- Pachyne*, SALISB., in Trans. Hort. Soc. I. p. 299 (1812)
- Cyanorchis*, THOU., Hist. Pl. Orch. Table des Espéc. I. et t. 33 (1822)
- Tankervillia*, LINK, Handb. I. p. 251 (1829)
- Hecabe*, RAF., Fl. Tellur. IV. p. 44 (1836)

Phajus maculatus, LINDL., in WALL. Cat. n. 3748 (1828); BL., Mus. Bot. Lugd. Bat. I. p. 9, t. 5 (1849); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 204 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 24 (1876); MAK., in Tokyo Bot. Mag. X. p. 109 (1896); MATSUM., Ind. Pl. Jap. II. 1. p. 257 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1666 (1931)

Nom. Jap. *Hosikeiran*

Leg. Ipse, April. 4, 1927.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. Occurs in the laurisilvae.

Phajus minor, BL., Mus. Bot. Lugd. Bat. II. p. 181 (1853 ; SCHL., Orchid. Sino-Jap. Prodr. p. 231 (1919) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 62 (1929)

Syn. *Phajus maculatus*, LINDL. var. *minor*, FR. et SAV., Enum. Pl. Jap. II. p. 24 (1876) ; MATSUM., Ind. Pl. Jap. II. 1. p. 257 (1905) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1666 (1931)

Nom. Jap. *Ganzeikiran*

Leg. Ipse, Jun. 17, 1928.

Distr. Honsyû, Kyûsyû, Tanegasima.

Note. This terrestrial orchid is found in the laurisilvae.

Calanthe, R. BR., in Bot. Reg. sub. t. 573 (1821) ;
ENDL., Gen. Pl. n. 1501 (1836-40 ; BENTH. et HOOK. f., Gen. Pl. III. p. 520 (1883) ;
PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 153 (1839) ; SCHL., Orchid. p. 304 (1915) ; LEMÉE, Dict. Gen. Pl. Phan. I. p. 748 1929

Syn. *Alismorkis*, THOU., in Nouv. Bull. Soc. Philom. Paris. I. p. 318 (1809

Sylvalismis, THOU., Hist. Pl. Orchid. t. 36 (1822)

Alismorchis, THOU., id. t. 35 (1822

Calanthe Fauriei, SCHL., Orchid. Sino-Jap. Prodr. pp. 66, 236 (1919 ; MASAMUNE, Prel. Rep. Veg. Yak. p. 58 (1929 ; MAK. et NEM., Fl. Jap. ed. 2. p. 1620 (1931)

Nom. Jap. *Simaebine*

Leg. Ipse, Jul. 29, 1928.

Distr. Okinawa.

Note. The species is found as undergrowth in the lower part of the laurisilvae and in the lauri-aculisilvae.

Calanthe Matsumurana, SCHL., in Fedd. Rep. II. p. 168 1906 , et Orchid. Sino-Jap. Prodr. p. 239 (1919) ; MASAMUNE, Prel. Rep. Veg. Yak. p. 58 (1929)

Syn. *Calanthe veratrifolia*, KRANZ., in Engl. Bot. Jahrb. VI. p. 54 (1885)

Calanthe triplicata, AMES, in Philipp. Journ. Sci. II. Bot. p. 326 (1901) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1623 (1931)

Calanthe veratrifolia, R. BR. ; MATSUM. et HAY., Enum. Pl. Formos. p. 411 (1906)

Nom. Jap. *Tururan*

Leg. Ipse, Jul. 21, 1924.

Distr. Kyûsyû, Amami-Ôsima, Okinawa, Taiwan, Philippines.

Note. Occurs as undergrowth in the laurisilvae.

Calanthe striata, R. BR. var. *Sieboldi*, MAXIM., in Mém. Biolog. VIII. p. 641 (1872) ;
FR. et SAV., Enum. Pl. Jap. II. p. 24 (1876) ; MAK., in Tokyo Bot. Mag. III. p. 448 (1889) ; YATABE, Iconog. Fl. Jap. I. 3. p. 209 Pl. LI (1893) , et in Tokyo Bot. Mag. XVII. p. 143 (1903) ; MATSUM., Ind. Pl. Jap. II. 1. p. 238 (1905) ; SCHL., Orchid. Sino-Jap. Prodr. p. 242 (1919) ; MAK. et NEM., Fl. Jap. ed. 2. p. 1622 (1931)

Syn. *Calanthe Sieboldi*, DECN., ex REGEL, Ind. Sem. Hort. Petersb. p. 80 (1868) ; MORI, Enum. Pl. Cor. p. 100 (1922)

Nom. Jap. *Ki-ebine*

The General Secretary reported that there had been no withdrawals of application, since the previous meeting.

The Chairman announced that in accordance with Rule 45, the Council submit for confirmation to the meeting the following change in the constitution of the Council, made in one of the Council Meetings, held since the last Ordinary Monthly Meeting :—

Library Secretary—Mr. Percy Brown, *vice* Dr. A. M. Heron, who has gone on leave.

The appointment was confirmed.

After these announcements, the Chairman vacated the chair, which was then occupied by Mr. Percy Brown, Member of Council and Library Secretary.

Papers were presented as detailed below.

The Chairman announced the result of the ballot for the election of Ordinary Members and declared that all the candidates had been duly elected.

The Chairman announced that no meeting of the Medical Section had yet been arranged to be held during the current month.

The Chairman announced that, unless special notice was given, there would be no Ordinary Monthly Meeting during the recess month, October.

The following papers were read :—

1. COL. I. FROILANO DE MELLO.—*Further Contributions to the Study of the Blood Parasites of the Indian Birds, together with a List of the Hemoparasites hitherto recorded.*

In this paper the author gives a complete list of the Hemoparasites recorded from Indian birds and discusses their classification and relationships. In addition, he describes a number of new species of Hemoproteids which he has studied in detail from Nova Goa and other places.

2. A. BANERJI-SASTRI.—*The Nāgas in the 3rd and 4th Centuries A.D.*

According to V. A. Smith the history of India in the 3rd century A.D. is wrapped in obscurity at present impenetrable. Mr. K. P. Jayaswal challenges this view and endeavours to prove that there was a mighty Bhāraśiva Nāga empire from c. 31 B.C. to 284 A.D. that merged in the Vākāṭaka empire (c. 284 A.D. to 348 A.D.). Mr. Jayaswal's reconstruction is based on two lines of a single inscription. After an examination of the evidences the writer concludes "As such a Bhāraśiva Nāga Empire must remain, pending further corroboration, a figment of the imagination". A large number of independent States flourished in Northern India side by side in the 3rd and the 4th centuries A.D. The writer also criticises the views of

Mr. Jayaswal relating to the Nāgas of Vidisa and in conclusion discusses the chronology of the other contemporaneous Nāga dynasties including one founded by Nava.

Mr. W. D. West asked :—

What were the two lines of the inscription, on which Mr. Jayaswal based his conclusions ?

Rai Bahadur R. Chanda replied : V. A. Smith's remarks that the history of India in the 3rd century A.D. is wrapped in obscurity refers to the dynastic and not to the cultural history. There are specimens of sculpture that may be tentatively assigned to the 3rd century A.D.

Mr. Percy Brown said that although no doubt there was obscurity in the dynastic history of India in the 3rd century A.D., a view first advanced by R. C. Datta, and afterwards confirmed by V. A. Smith, this did not apply to the cultural history of the country, the course of which is fairly clear owing to the notable artistic and architectural records of the period that have been preserved. The excavations at Taxila, the collections at Mathura and other historical sites which have been explored shed considerable light on the conditions that prevailed in the north, while the stupa of Amaravati is evidence of Buddhist activity in the south. It appears that from its cultural aspect the 3rd century A.D. was a period more of stagnation than obscurity, yet on the political conditions of the country at this time any reliable data would be most valuable.

3. SASANKA SEKHAR SARKAR.—*The Social Institutions of the Mālpāhārīās.*

The Mālpāhārīās are an aboriginal tribe occupying the southern portion of the Rajmahal hills in the Santal Parganas who have adopted Hinduism and most of whom speak a Bengali dialect. The Mālpāhārīās of the Dumka sub-division are divided into eleven social groups or septs. Marriage tie is very loose among them. The writer attributes this to excessive alcoholism. The Mālpāhārīās at present use Bengali terms of kinship of which a list is given. He also describes the name-giving, marriage, and funeral rites of the tribe.

4. SAYYID WAJAHAT HUSAIN.—*Āzād Bilgrāmī.*

In this paper the author deals with an exhaustive life-history, and the contributions to Islamic literature of as-Sayyid Ghulām 'Alī Āzād bin as-Sayyid Nūḥ al-Ḥusainī al-Wāsiṭī, otherwise known in the literary world as Āzād Bilgrāmī.

Āzād's early life and nativity. Scholastic career under Mawlānā 'Abd al-Jalīl and Sayyid al-'Arīfīn Mīr Sayyid Luṭ-fallāh. Itinerary in Northern India and Southern India. Acquaintance with Nawwāb Āṣaf Jāh of Deccan, and subsequent enlistment as a soldier in his army. Pilgrimage to Mecca. Death.

The author gives a detailed list of the works of Āzād and marks him out as an erudite scholar and linguist with mastery in Arabic, Persian, Sanskrit, Urdu, and Hindi, well worth the appellation *Hassān al-Hind*. He also points out that the literary activities of Āzād were not confined to linguistics alone,

Bot. Mag. XVII. p. 143 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 240 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 269 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1629 (1931)

Nom. Jap. *Kanran*

Leg. Ipse, ca. Kosedo, Jul. 12, 1928.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Okinawa.

Note. Grows as undergrowth in the laurisilvae or in the lauri-aculisilvae.

Cymbidium nagi-folium, MASAMUNE, in Tokyo Bot. Mag. XLIV. p. 220 (1930); MAK. et NEM., Fl. Jap. ed. 2. p. 1630 (1931)

Syn. *Cymbidium lancifolium*, (non HOOK.) MAK., in Tokyo Bot. Mag. X. p. (109) (1896); MATSUM., Ind. Pl. Jap. II. 1. p. 240 (1905); MAK. et NEM., Fl. Jap. ed. 1. p. 1159 (1925)

Nom. Jap. *Nagiran*

Leg. Ipse, Jul. 21, 1924.

Distr. Honsyû, Sikoku, Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa, Taiwan.

Note. Found as undergrowth in the laurisilvae.

Cymbidium virescens, LINDL., Bot. Reg. Misc. p. 37 (1838); SCHL., Orchid. Sino-Jap. Prodr. p. 272 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1632 (1931); MIY. et KUDO, Fl. Hokk. and Sagh. III. p. 387 (1932)

Syn. *Maxillaria Goeringii*, RCHB. f., in Bot. Zeit. p. 334 (1845)

Cymbidium Goeringii, RCHB. f., in Ann. Walp. III. p. 547 (1852)

Cymbidium virens, RCHB. f., in Walp. Ann. VI. p. 626 (1861); MIQ., in Ann. Mus. Bot. Lugd. Bat. II. p. 205 (1866); FR. et SAV., Enum. Pl. Jap. II. p. 27 (1876); YABE, in Tokyo Bot. Mag. XVII. p. 143 (1903); MATSUM., Ind. Pl. Jap. II. 1. p. 241 (1905); MORI, Enum. Pl. Cor. p. 101 (1922)

Nom. Jap. *Syunran*

Leg. KUDO! Aug. 1907.

Distr. Yezo, Honsyû, Sikoku, Kyûsyû, Korea, China.

Note. Dr. KUDO told me that he had collected this species in the island. The orchid has its southern limit in this island.

Pachyrhizanthé, NAK., in Tokyo Bot. Mag. XLV.

p. 109 (1931)

Syn. *Cymbidium*, Sect. *Pachyrhizanthé*, SCHL., Orchid. Sino-Jap. Prodr. p. 73 (1919)

Pachyrhizanthé nipponicum, NAK., in Tokyo Bot. Mag. XLV. p. 109 (1931)

Syn. *Bletia nipponica*, FR. et SAV., Enum. Pl. Jap. II. p. 511 (1876); TAN., in Tokyo Bot. Mag. I. p. 186 (1837)

Cymbidium nipponicum, MAK., in Tokyo Bot. Mag. XVIII. p. 107 (1904); MATSUM., Ind. Pl. Jap. II. 1. p. 240 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 270 (1919); MAK. et NEM., Fl. Jap. ed. 2. p. 1630 (1931)

Nom. Jap. *Mayaran*

Leg. Ipse, ca. 700 m. Jun. 17, 1928.

Distr. Honsyû, Sikoku, Kyûsyû.

Note. Occurs as undergrowth in the lauri-aculisilvae; has its southern limit here.

Aerides, LOUR., Fl. Cochinch. p. 525 (1790); ENDL., Gen. Pl. n. 1493 (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 576 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 217 (1839); SCHL., Orchid. p. 548 (1915); LEMÉE, Dict. Gen. Pl. Phan. I. p. 97 (1929)

Syn. *Orxera*, RAF., Fl. Tellur. IV. p. 37 (1836)

Aerides japonicum, REICHB. f., in Hamb. Gartenz. XIX. p. 210 (1863); MATSUM., Ind. Pl. Jap. II. 1. p. 234 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 278 (1919); MORI, Enum. Pl. Cor. p. 100 (1922); MASAMUNE, Prel. Rep. Veg. Yak. p. 58 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1614 (1931)

Nom. Jap. *Nagoran*

Leg. Ipse, Aug. 8, 1924.

Distr. Honsyû, Kyûsyû, Amami-Ôsima, Tanegasima, Okinawa, Korea.

Note. The epiphyte grows in the laurisilvae. It was rather abundant in the island but recently it has been collected for its beauty and is getting rarer.

Luisia, GAUDICH, in Bot. Voy. Freycinet p. 426 t. 37 (1826); ENDL., Gen. Pl. n. 1427b (1836-40); BENTH. et HOOK. f., Gen. Pl. III. p. 571 (1883); PFITZ., in ENGL. u. PRANT. Nat. Pfl.-fam. II. vi. p. 210 (1889); SCHL., Orchid. p. 556 (1915); LEMÉE, Dict. Gen. Pl. Phan. IV. p. 190 (1932)

Syn. *Birchea*, A. RICH., in Ann. Sc. Nat. 2 sér. XV. p. 66 t. 10 (1838)

Luisa, ENDL., Gen. Pl. p. 199 (1837)

Mesoclastes, LINDL., Gen. et Sp. Orchid. Pl. p. 44 (1830)

Luisia Fauriei, SCHL., Orchid. Sino-Jap. Prodr. p. 75 et 280 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 61 (1929); MAK. et NEM., Fl. Jap. ed. 2. p. 1658 (1931)

Nom. Jap. *Tanegasima-bôran*

Leg. Ipse, Aug. 11, 1924.

Distr. Tanegasima.

Note. The species is restricted to Tanegasima and Yakusima.

Luisia teres, BL., Rumph. IV. p. 50 (1840); MATSUM., Ind. Pl. Jap. II. 1. p. 254 (1905); SCHL., Orchid. Sino-Jap. Prodr. p. 281 (1919); MASAMUNE, Prel. Rep. Veg. p. 61 (1929)

Syn. *Epidendrum teres*, THUNB., Fl. Jap. p. 30 (1793); MAK. et NEM., Fl. Jap. ed. 2. p. 1658 (1931)

Nom. Jap. *Bôran*

Leg. Ipse, Kurio.

Distr. Kyûsyû, Tanegasima, Amami-Ôsima, Okinawa.

Note. The species is found as epiphyte on the trunks of *Pinus Thunbergii* in lowlying lands.

Gastrochilus, D. DON, Prodr. Fl. Nepal. p. 32 (1825); SCHL., Orchid. p. 581 (1915); LEMÉE, Dict. Gen. Pl. Phan. III. p. 207 (1931)

Gastrochilus japonicus, (MAK.) SCHL., in Fedd. Rep. XII. p. 315 (1913), et Orchid. Sino-Jap. Prodr. p. 283 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929)

Syn. *Saccolabium japonicum*, MAK., Ill. Fl. Jap. I. 3. t. 16 (1890); MATSUM., Ind. Pl. Jap. II. 1. p. 262 (1905); MAK. et NEM., Fl. Jap. ed. 2. p. 1674 (1931)

Nom. Jap. *Kasinokiran*

Leg. Ipse, ca. Hirauti

Distr. Sikoku, Kyûsyû, Amami-Ôsima, Okinawa.

Note. The epiphyte is found in the laurisilvae.

Gastrochilus matsuran, (MAK.) SCHL., Orchid. Sino-Jap. Prodr. p. 289 (1919); MASAMUNE, Prel. Rep. Veg. Yak. p. 60 (1929)

[illegible]

| | | | | | | | | | | | | | | |
|---|---|----|----|----|----|----|------------------------|----|----|----|---|--|--|-----|
| <i>Cymbidium virescens</i> , LINDL. | | | | | | | + | + | + | + | + | | | + |
| <i>Pachyrhizantha nipponicum</i> , NAK. | | | | | | | + | + | + | | | | | |
| <i>Aerides japonicum</i> , RECHB. f. | | + | + | + | + | | + | | + | + | | | | |
| <i>Luisia Fauriei</i> , SCHL. | | | | | | | + | | | | | | | |
| <i>Luisia teres</i> , BL. | | + | + | + | + | | | | | | | | | |
| <i>Gastrochilus japonicus</i> , SCHL. | | + | + | | | | + | + | | | | | | |
| <i>Gastrochilus matsuran</i> , SCHL. | | | | | | | + | + | + | | | | | |
| <i>Nipponorchis falcata</i> , MASAMUNE | | + | + | + | | | | + | + | + | | | | |
| Total 68 | 1 | 22 | 32 | 30 | 16 | 47 | 31 | 32 | 16 | 9 | 1 | | | 312 |
| Percentage | 1 | 23 | 47 | 44 | 24 | 69 | 46 | 47 | 24 | 13 | 1 | | | 418 |
| (Southern elements 41) | | | | | | | (Northern elements 53) | | | | | | | |

At first I thought the island had a closer connection with the southern regions in respect of the phytogeography of the *Orchidaceous* plants, because there are several species and genera of Orchids which are thought to have their northern limit of habitat in this island. But as my studies on the *Orchidaceous* plants proceeded I learned that even those which are thought to have their northern limit here are also found in Kyûsyû and Sikoku. The fact forced me to conclude the island is closely related with the northern regions as shown in the table above. But most of the orchids in the island have their northern limit in Kyûsyû or in the southern part of Honsyû which indicates that the island is intimately related to those regions so far as the distribution of *Orchidaceous* plants is concerned.

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